NOVA SCOTIA
Department of Finance

Nova Scotia Tax Credit Review

Phase I Report

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EXECUTIVE SUMMARY
TAX CREDIT REVIEW: PHASE I

Nova Scotia has a number of tax credit programs as well as Harmonized Sales Tax (HST) rebate programs that have evolved over several years. The tax credit programs were estimated to cost the Nova Scotia taxpayer $51 million in 1998 and, if left unchanged, are estimated to grow to over $100 million by 2002. The importance of reviewing provincial tax credits is heightened given the fiscal challenges facing the Province. The Minister of Finance in his Budget Address of October 14, 1999 announced a review of Nova Scotia's tax credit system: "My department is now working on a report that will show the costs and benefits associated with each such measure. We will put them on the table for public comment. Tax credits that have become tax loopholes will be closed."

Because of the scope and depth of work required to complete a proper evaluation of all the tax credits and HST rebates, the project was broken into phases with the initial phase being completed by the Spring 2000 budget. Included in this phase are: ISO 9000/ISO 14000 Tax Credits, Film Industry Tax Credit, Investment Tax Credit for Manufacturing and Processing, Research and Development Tax Credit, Equity Tax Credit, MUSH Sector HST Rebates, and Non-Profit Organization and Charity HST Rebates.

These credits and rebates were reviewed using a range of analytical tools including the three economic principles of efficiency, effectiveness and equity. If efficient, tax measures should not lead to waste and distortion. Effectiveness means the measure achieves its desired result while equity implies fairness. However, tax measures were not evaluated on the basis of these principles alone. The tax system does not exist in isolation but has an impact on the larger social and economic world as well as government's finances.

On the basis of an extensive evaluation including a financial cost-benefit analysis, survey of credit recipients, their financial statements, and data gathered from multiple sources, the following policy decisions were formulated.

Policy Decisions

General

- Government will continue to evaluate all provincially administered tax credits on an on-going basis.
- All future tax measures will be designed so they are easily evaluated and an evaluation framework and schedule should be part of the design of the tax measure.

Equity Tax Credit (ETC)

- The general ETC program will continue unchanged until it expires on December 31, 2001.
- Further analysis on the general ETC program will be undertaken in 2001 to determine if the program should expire.
- The Community Economic Development Investment Funds' expiry will be extended to December 31, 2003.
- Regulatory measures will be implemented for the Community Economic Development Investment Funds to ensure reinvestment of equity within the Nova Scotia economy.

Investment Tax Credit for Manufacturing and Processing (ITCM&P)

- As of January 1, 2001, the tax credit rate will be lowered from 30 per cent to 15 per cent of eligible investment.
- Investments which are substantially underway by January 1, 2001 will be 'grandfathered'.
- The credit will continue at the lower rate to its expiry in December 2002.

Film Industry Tax Credit (FITC)

- The FITC will be extended for two years until December 31, 2002.
- During this period, an in-depth analysis of the film industry will be undertaken to determine its value and the mix of government programs and assistance that would be appropriate.
- The asset cap will be removed.
- The tax credit will be reduced from 32.5 per cent to 30 per cent in urban areas. The rate will be increased to 35 percent in rural areas to help promote increased activity in these areas of the province.
- The Department will work with the Nova Scotia Film Development Corporation (NSFDC) to define the rural/urban eligibility criteria.

Nova Scotia Research and Development Tax Credit (R&D)

- Research and development will be encouraged as a matter of public policy.
- The Nova Scotia Research and Development Tax Credit will continue.
- "Anti-stacking" rules will be implemented.
- A comprehensive review of this tax credit will take place when there is enough data to fully evaluate the credit (i.e., allow time for some of the research and development efforts to come to fruition).

ISO9000/ISO14000 Tax Credits

- The ISO9000 and ISO14000 tax credits will expire on December 31, 2000.

Harmonized Sales Tax (HST) Rebates

- The present level of HST rebates will continue for the MUSH sector.
- The present level of HST rebates will continue for non-profit organizations (NPOs) and charities.

INTRODUCTION

Budget Promises

Commitments made by the Minister of Finance in his 1999/2000 Budget Address included a review of Nova Scotia's tax credit system.

> "Over the years we have developed many tax credits, tax expenditures, and rebates. We have tax rebates for fire trucks and new homes. We have tax credits for research and development and for buying a new piece of machinery. My department is now working on a report that will show the costs and benefits associated with each such measure. We will put them on the table for public comment. Tax Credits that have become tax loopholes will be closed."

Phases of The Tax Credit Review

The scope and depth of work required to complete a proper evaluation of all the tax credits and Harmonized Sales Tax (HST) rebates is extensive. At the time that many of the tax credits were implemented, they were not designed for ease of evaluation, making data collection very difficult. In light of time and resource constraints, it was determined that the most effective means to approach the review would be to break it into phases with an analysis of the credits of immediate importance being completed by the spring budget 2000, with further work continuing into the next fiscal year.

The initial phase of Nova Scotia's Tax Credit Review encompassed an evaluation of the following credits and HST rebates: Equity Tax Credit; Film Industry Tax Credit; Investment Tax Credit for Manufacturing and Processing; Research and Development Tax Credit; ISO 9000/ISO14000 Tax Credits; and HST rebates for the MUSH sector (municipalities, universities, schools and hospitals), Non-Profit Organizations and Charities. Selection of credits reviewed in this phase were based on two criteria: the amount of government expenditure resulting from the credit and/or the resources required for conducting the evaluation.

As we enter the next phase of the project, further evaluations of some of those credits will continue in the coming months and the scope of the review will be expanded to include all other credits and HST rebates administered by the Province: the New Small Business Tax Holiday, New Small Business Rate Reduction, HST Rebate for Volunteer Fire Departments, HST Rebate for Printed Books, Labour-Sponsored Venture-Capital Corporations Tax Credit and New Home Construction HST Rebates. Work on the Government's commitments for new tax credit initiatives will also be carried out.

Personal tax credits which were not implemented for economic development reasons, but rather for social policy reasons, will be considered in the context of the broader review of the "tax on

income" system of personal income taxes. These credits include the Low Income Tax Reduction and Political Contributions Tax Deduction.

Tax System Context

Principles of Taxation

The Tax Credit Review focuses only on one part of the tax system but is subject to the basic principles that should underlie any system of taxation - efficiency, effectiveness, and equity. Following is a definition of each principle and its application to the tax system.

Efficiency - producing without waste. For a tax measure, its implementation should not lead to waste and distortion in spending or production. Its transaction costs should be low. The measure should be simple, easy to understand, predictable (does not change year-to-year unless clearly specified in advance), transparent (taxpayers can know the tax implications of their decisions before making them) and flexible (able to adjust to changes in the economy).

Effectiveness - actual production or power to produce an effect. For a tax measure, its implementation should achieve the desired result. As such, tax systems need to be integrated between levels of government and between corporate and personal tax systems so they are not working at cross purposes.

Equity - treating like as like, unlike as unlike: fairness. For a tax credit to be equitable it must treat "like" categories such as earned income and level of income the same. Differences based on income (different treatments for different levels), location (if higher costs, greater disparities) and age or other factors may be acceptable if they can be judged fair or equitable.

Tax Revenues and Credits

Taxation on personal and corporate income is used to raise revenues for the Province of Nova Scotia. The taxation system is also used to achieve economic and/or social objectives. One method to achieve these objectives is through the use of tax credits. Tax credits are provincial expenditures that act to reduce the amount of income tax payable. Tax credits may be either refundable or non-refundable. Refundable tax credits allow a company or individual to receive the full amount of the tax credit whether through a reduction in tax payable, cash or some combination of the two. A non-refundable tax credit reduces tax payable.

In the 1998/99 fiscal year, $1.112 billion in revenue was raised by personal and corporate income taxes, representing 24 per cent of total provincial revenue. Simultaneously, during the 1998 tax year, the Province provided over $51 million in tax relief to businesses and individuals in the form of tax credits. This represents a tripling in the value of tax credits provided by the Province since 1995, only three years earlier. It is projected that the value of personal and corporate tax credits

will grow to $69.5 million in the 1999 taxation year. If left unchanged, this growth will continue and is projected to reach over $100 million within the next two years. The importance of reviewing provincial tax credits, to determine if they are meeting the objectives of government in a cost- effective manner, is heightened given the fiscal challenges facing the Province.

The following table shows the annual cost to the Province, over the last 3 years, of the tax credits currently under review:

Value of Credits (Estimate March 2000)
(millions of dollars)

Credit	1997 ($)	1998 ($)	1999 ($)
ETC	2.0	1.9	2.0
ITCM&P	10.2	32.6	39.6
FITC	1.9	5.1	14.3
R&D	11.1	9.5	10.0
ISO9000/ISO14000	0.2	0.2	0.2

Process

In order to complete a comprehensive review of these credits, several tasks had to be completed simultaneously. As some information was readily available from internal sources, a process of determining information gaps and evaluating current data was pursued. As information shortfalls were determined, Finance began to work with internal and external sources to examine information needs and the best means of data collection. Surveys were developed for four of the tax credits (ISO, ETC, ITCM&P, R&D) and questionnaires were sent to the credit recipients in order to obtain the necessary information to complete both an economic impact analysis and a financial cost-benefit analysis.

Economic Impact Analysis was conducted using the Nova Scotia Input Output System (NSIO). Generally, the impact simulations were performed on investment expenditures associated with the credit. If appropriate or possible, analysis was also done on annual operations associated with the investment. Investment expenditures are one-time expenditures and therefore have one-time impacts. As long as the company is in operation, impacts associated with annual operations occur yearly.

Impacts are reported for household income, employment (person-years) and provincial tax revenue (personal income tax and spending tax), corporate income tax is not included. Impacts

are also divided into three components: direct, spinoff and total. Direct impacts are those that result directly from the company's expenditures on goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (caused by inter-industry transactions) and induced impacts (caused by household spending). Total impacts are the sum of direct and spinoff impacts. Financial cost-benefit analysis compares total estimated provincial government revenue to estimated provincial government expenditure.

Public Comment

As was promised in the budget address, a vehicle for public comment was made available. A Tax Credit Review Website was developed and made accessible to the public on December 17, 1999. This allowed individual comments and concerns about the tax credits to be heard and considered in the evaluation. While not all of the credits were selected for evaluation in Phase I, interested parties were invited to comment on any of the provincial tax credits via the Internet site.

Unfortunately participation in the website was quite low. There were only 32 responses, although the number of "hits" was higher. The use of a website does not allow the collection of statistically significant statistics but it does allow for the public to provide comments on the process. Unfortunately, some of the respondents did not follow the instructions and had their comments cut off by character limits so their comments were not fully recorded. Some individuals provided a written response to the Department through E-mail or a letter.

Comments ranged from eliminating tax credits to strong support for individual credits. There were some suggestions that tax credits should be related to unemployment in the sense that they should only be available in areas of high unemployment or outside metro Halifax.

EQUITY TAX CREDIT (ETC)

The Credit in Brief

The Equity Tax Credit (ETC) program was introduced in 1994 to assist Nova Scotia small businesses, co-operatives and community economic development (CED) initiatives in obtaining equity financing (venture capital) by providing personal income tax credits for investments in Nova Scotia companies and Community Economic Development Investment Funds (CEDIF). It is a non-refundable personal income tax credit available to residents of Nova Scotia who are at least 19 years of age and who make an eligible investment in a corporation that has been certified under the ETC program. The tax credit is equivalent to 30 per cent of the amount invested and cannot exceed $9,000 in any one year. Corporations must apply to the Department of Finance for certification prior to the issuance of shares. Eligible investors who purchase these shares in a specified period will receive the credit. Unused amounts of the credit by the individual may be carried forward seven years and back, three years. The program is currently set to expire December 31, 2001. (Eligibility criteria for the ETC is outlined in detail in Appendix A.) Given that the first CEDIFs are only now being established, this program has not been included in the cost-benefit analysis.

Equity Tax Credit Objectives

- To provide capital to small and medium-sized Nova Scotia companies. Nova Scotia companies require funds to capitalize on investment opportunities. Along with the Labour-Sponsored Venture Capital Corporation Tax Credit, the ETC is intended to create a Nova Scotia-based source of capital.
- To encourage investment in Nova Scotia companies by Nova Scotians. Nova Scotians invest over $650 million annually in RRSPs and registered pensions. Most of these funds flow out of the Province and provide valuable capital to businesses in other jurisdictions. By offering a tax incentive for investments in Nova Scotia businesses, it is hoped that a portion of the savings of Nova Scotians can be retained for use in the Province.
- To encourage Nova Scotia companies to seek equity investment. Nova Scotia businesses have traditionally relied heavily on debt and government assistance for their financing needs. As a result, Nova Scotia businesses have suffered the consequences of carrying excessive debt while missing out on important partnership opportunities provided by equity partners. It is intended that the ETC program will encourage Nova Scotia businesses to be less reliant on debt and government assistance.

Participation

From its inception in 1994 through to March 1999, 197 companies and 2,164 investors have participated in the Equity Tax Credit program. Participants have made $22.5 million dollars in investments and have received $6.6 million in credits:

Summary of Equity Tax Credit, 1994/99

Tax Year	# of Investors	# of Companies	Total Investments ($)	Total Credits ($)
1994	73	9	414,723	104,181
1995	176	26	1,633,515	484,616
1996	462	34	5,583,475	1,671,987
1997	895	63	8,131,342	2,374,153
1998	558	65	6,712,492	1,939,492
Totals	**2,164**	**197**	**22,475,547**	**6,574,429**

In terms of industry sectors the ETC does not mirror the structure of the Nova Scotia economy. In 1998, the primary sector's share of RDP was 3.9 per cent; the goods sector's share was 24.4 per cent while the service sector's share was 75.6 per cent. In contrast, during the 1994/98 period, 37 per cent of investment under the ETC was in the agriculture, fishing, forestry and mining industries, with 56 per cent of total investment being in the goods-producing sector. Investments in the service-producing sector total 44 per cent with the two largest areas of investment being Retail Trade at 12 per cent and Amusement and Recreational Services at 11 per cent.

Regionally, the total investment associated with the ETC is concentrated in the Halifax Regional Municipality (HRM), 63 per cent of the total. This overshadows both the 1998 HRM shares of total businesses (38.1 per cent) and total employment (44.3 per cent). It is clear that the Valley, South Shore and Western regions of the province are significantly under represented when measured against the number of businesses.

Performance Measures

Survival Rates

Survival rates for all start-up corporations who received the ETC are higher than the overall new business rates for Nova Scotia noted by Statistics Canada in its recently released *Failure Rates for New Firms 1984 to 1994.* The five-year survival rate for all new companies in Nova Scotia was 29 per cent (Statistics Canada) while it was 74 per cent for the ETC-certified companies (see Appendix A for details on survival rates).

It would appear that all corporations (both new and expansions) certified under the ETC program, are better equipped financially to take the steps from a start-up to an established business. This may not necessarily be due to the level of equity investments alone, as several respondents to the

ETC survey indicated that the equity investment made under the ETC allowed them to secure debt financing from financial institutions that would not otherwise have been available.

Certain conclusions are drawn from the financial statements of 31 corporations sampled from those certified under the ETC in the 1994 to 1997 period. As with the ETC credit as a whole, the majority of firms are start-up businesses. (Details can be found in Appendix A - Performance Measurements.)

Revenues

- The average annual change in revenues was positive for all of the economic sectors. Overall, the corporations experienced an 89 per cent increase in revenues for the year following the ETC-certified investment, and a further 33 per cent increase in the second year.

Profitability

- The companies studied were not very profitable. In Year 0, the year of certification, the companies recorded an average loss of $25,309. This figure increased to $68,445 in Year 1. This number is somewhat skewed by the results of the two companies that lost a combined $1.7 million in year 1. In year 2, the companies reported a modest average profit of $3,405.
- Being start-up businesses, most firms participating in the ETC program are in the high-growth period of the corporation's life cycle. Firms in a high-growth period often cannot fund their growth exclusively through corporate earnings, and therefore must access funds through external sources, either through debt, equity or both. These firms commonly exhibit strong revenue growth but only modest profitability.

Payroll

- The average annual change in payroll expenditures was positive for all of the economic sectors. Overall, the corporations doubled payroll expenditures in the period following certification, and increased payroll expenditures by 51 per cent in Year 2.

Liquidity

- The corporations studied experienced an improvement in their financial ratios calculated in the two periods following certification (i.e., current ratio, debt-to-equity and total debt-to-asset ratio).

Survey

The survey of companies resulted in a 25 per cent response rate. Overall, the results were positive towards the credit. In terms of the objectives of the ETC program, 93 per cent agreed that the ETC encouraged equity financing as opposed to debt, and for 89 per cent it allowed the corporation to obtain equity financing that was otherwise unavailable. The majority of the companies in this survey, 75 per cent, would not have started or expanded without the ETC. Overall 86 per cent of respondents agreed that the ETC has had a positive effect on the corporation.

Economic Impact Analysis

Economic impact analysis using the NSIO was done on the investment expenditures of the ETC-certified companies in the 1994-1997 period and their ongoing annual operations associated with the ETC investment. The results are presented in the following table. Key assumptions used in the Nova Scotia Impact Study are detailed in Appendix A.

The net cost-benefit of the ETC for each year (in the table) is the difference between the cumulative total tax revenue foregone due to the ETC and the cumulative total tax revenue collected as generated by ETC investment. The payback is the year in which the benefits related to the ETC investment (investment expenditures and their related ongoing annual operations) turns a positive cash flow for the provincial treasury.

On a financial cost-benefit analysis basis, the ETC does not provide an immediate positive return to the provincial treasury. This is to be expected with this type of program because the investment is considered to be 'seed' or start-up capital. In future years, the investment helps to generate ongoing economic impacts as long as the company survives. It is these ongoing impacts that ultimately provide a payback to the provincial treasury. Payback analysis determines that the ETC investments made over the time period 1994-1997 will generate a positive cash flow to the provincial treasury by 2000.

1994-2000 Impact, Cost-Benefit and Payback Analysis of the Nova Scotia Equity Tax Credit for Credits Received 1994-1997

Indicator	1994	1995	1996	1997	1998	1999	2000
Total Investment (millions $):	$0.4	$1.63	$5.6	$8.1	N/A	N/A	N/A
Cumulative:	$0.4	$2.0	$7.6	$15.8	$15,763	$15.8	$15.8
Total Employment (PYs):	1212	4456	158214	415629	5021131	5e+06	5e+06
Cumulative:							
Total Wages & Salaries (millions $):	$0.3	$1.1	$4.6	$10.4	$12.6	$13.4	$13.4
Cumulative	$0.3	$1.4	$6.0	$16.4	$29.0	$42.4	$55.8
Provincial Gov't Revenue (millions $):	$0.03	$0.1	$0.5	$1.1	$1.3	$1.4	$1.4
Cumulative	$0.03	$0.1	$0.6	$1.7	$3.1	$4.5	$5.9
(ETC) Foregone Revenue (millions $):	$0.1	$0.5	$1.7	$2.4	N/A	N/A	N/A
Cumulative:	$0.1	$0.6	$2.3	$4.6	$4.6	$4.6	$4.6
Cost-Benefit/ Payback to Provincial Government (millions $)	($0.1)	($0.4)	($1.6)	($2.9)	($1.6)	($0.2)	1.3

Note: Totals do not add exactly due to rounding.

The assumption of incrementality is critical to economic analysis of the ETC program. The impacts of ETC program are assumed to be totally incremental. In other words, if the operation would have been undertaken anyway, without the ETC incentive, the ETC would have been a total cost without generating benefits of any kind to the province. It is noted that 75 per cent of respondents in a Department of Finance survey of companies involved in the ETC program indicated that they would not have started a company or expanded operations without the credit. This provides evidence that the ETC is significantly incremental.

Analysis

In terms of efficiency there are some transaction costs associated with applying for certification but they are modest when compared to filing a general share offering. The measure is transparent and reasonably flexible.

In terms of effectiveness, 2,164 investors, invested $22.5 million in 197 companies fulfilling the objectives of the ETC. The survey results also confirmed the objectives: 93 per cent agreed that the ETC encouraged equity financing as opposed to debt; and 89 per cent indicated it allowed them to obtain equity financing that was otherwise unavailable. Three quarters of respondents indicated that they would not have started or expanded their business without the ETC. The general ETC program is equitable in treating all corporations that meet the criteria alike.

Community Economic Development Investment Funds

Community Economic Development Investment Funds (CEDIFs) are investment funds created by a community for the purpose of raising capital and investing in community-based businesses. The legislation enabling the creation of CEDIFs in Nova Scotia was introduced in 1994 as part of the *Equity Tax Credit Act*. Many applications under the program were delayed, however, due to conflicts with the Nova Scotia *Securities Act*. The conflicts have now been addressed, and resolved, and the first provincial CEDIFs are now being registered.

From an investor's perspective, CEDIFs provide advantages over a regular ETC investment:

- In addition to the 30 per cent tax credit, the investment is partially guaranteed by the Province of Nova Scotia. The guarantee is for 20 per cent of the original investment and only applies to funds serving communities outside Halifax, Dartmouth, Bedford, and Sackville.
- CEDIF investments are pre-approved holdings for self-directed RRSPs.
- The fund organizers are required to file a simplified prospectus with the Securities Commission, providing the investor with full disclosure of relevant facts.

The primary advantage of the CED model for fund organizers is that it is a better mechanism for raising large sums of money ($500,000 to $1 million). The fund organizers are required to file a simplified prospectus which enables the sale of shares through registered dealers to the general public.

The primary disadvantage to the CED model from the fund organizers' perspective is cost. These include the legal costs of preparing the prospectus and printing promotional material. It can take upwards of $100,000 to establish a CEDIF.

Given the short time frame in which the CEDIFs have to operate before the programs expire, the principles of equity, efficiency and effectiveness would suggest some adjustment to the expiry of the program be implemented.

Policy Decisions

- The general ETC program will continue unchanged until it expires December 31, 2001.
- Further analysis on the general ETC program will be undertaken in 2001 to determine if the program should expire.
- The Community Economic Development Investment Funds' expiry will be extended to December 31, 2003 to encourage more activity under this program in the rural communities.
- Housekeeping measures will be implemented through regulations for the Community Economic Development Investment Funds to ensure reinvestment of equity within the Nova Scotia economy.

INVESTMENT TAX CREDIT FOR MANUFACTURING AND PROCESSING (ITCM&P)

The Credit in Brief

In 1997, the Province introduced the Investment Tax Credit for Manufacturing and Processing (ITCM&P). The ITCM&P is a 30 per cent non-refundable corporate income tax credit on qualifying investments in new manufacturing and processing plant and equipment for use in manufacturing and processing in Nova Scotia. The credit may be applied to reduce corporate income taxes payable and unused amounts may be carried forward seven years and back three years, to a date no earlier than January 1, 1997. The qualifying period for eligible investments is after December 31, 1996 and before January 1, 2003. Liability for the credit will continue past the expiry date as carry-forwards will continue for seven years following the investment. The ITCM&P is administered by the Canada Customs and Revenue Agency (CCRA) as part of the normal corporate tax filing process.

Investment Tax Credit for Manufacturing and Processing Objectives

The credit was initiated by the Department of Economic Development and Tourism to expand the level of manufacturing activity in the Province through expansion of existing capacity and recruitment of new investment to the Province.

Participation

The ITCM&P has had a relatively short history. Data is only fully available for corporations who filed corporate taxes in 1997 and those companies who were assessed in 1998 by and including October 15, 1998. From 1997 to October 15, 1998, a total of 356 companies used the ITCM&P. Those companies generated a total capital investment of $202.4 million, and therefore, a potential tax credit liability of $60.7 million for the Province. The following table provides a breakdown of ITCM&P utilization and total eligible capital investments by industry.

The definition of manufacturing and processing firms used by CCRA relates to the activity as opposed to the type of firm (see definition of manufacturing and processing in Appendix B). This results in a broad range of firm types beyond the traditional definition of manufacturing claiming the credit. The following table confirms this as 46.9 per cent of the number of claimants are not in the Standard Industrial Classification (SIC) grouping of Manufacturing. Food and Beverage Services (essentially restaurants) comprise 11.5 per cent of claimants while Wholesale Trade (primarily fish and seafood wholesalers) form 9.3 per cent of claimants. However, this accounts for less than 20 per cent of total capital investment, and therefore tax credits. Further details on participation under the ITCM&P can be found in Appendix B attached.

Rate

The Nova Scotia ITCM&P is a 30 per cent non-refundable tax credit on eligible investments. This rate is high in comparison with the provincial general and small business corporate income tax rates of 16 per cent and 5 per cent, respectively. It is likely that given the corporate tax rates, many firms will be unable to utilize the full extent of the tax credit unless they are quite profitable. Comparing actual assessed credit values to estimated capital investment intentions indicates that firms earning credits in 1997 were only able to claim 12.3 per cent of assessed credits in 1997 and 5 per cent of the assessed 1997 credit in 1998. The situation for firms that "earned" the credit in 1998 improved as it appears they were able to use 41.5 per cent of the credit in 1998.

The Nova Scotia ITCM&P rate is higher than other provinces with comparable credits such as Prince Edward Island, Manitoba and Saskatchewan with 10 per cent, 10 per cent and 6 per cent, respectively. The federal government also has an investment tax credit with a 10 per cent rate but the eligible investment category is broader than manufacturing. Some provinces utilize a manufacturing profits rate reduction rather than or in conjunction with an ITCM&P. Prior to August 1999, the federal administration of provincial tax credits also caused complex interactions with respect to some of the companies claiming the ITCM&P. Revenue Canada (now CCRA) reduced the depreciable amount of the capital investment by the total amount of the eligible tax credit, not the amount claimed against the corporate income tax in the year of investment. This reduction of the investment value claimed, negatively affected the companies by increasing corporate taxable income. In August 1999, however, Revenue Canada changed its administration of provincial tax credits to only reduce depreciable costs by the amount of the credit claimed in each year.

Number of Companies (Clients) and Total Eligible Capital Investment
Nova Scotia Manufacturing & Processing Tax Credit
1997 to October 15, 1998

Industry	Number of Companies	Percentage Share Companies	Total Eligible Investment	Percentage Share Investment
Agricultural	5	1.4%	$412,655	0.2%
Fishing &Trapping	7	2.0%	$366,881	0.2%
Logging	4	1.1%	$1,975,145	1.0%
Mining	6	1.7%	$3,591,454	1.8%
Manufacturing	189	53.1%	$166,721,294	82.4%
Construction	10	2.8%	$12,137,540	6.0%
Wholesale Trade	33	9.3%	$6,424,136	3.2%
Retail Trade	12	3.4%	$4,447,203	2.2%
Finance, Insurance & Real Estate	7	20.%	$743,075	0.4%
Business Services	14	3.9%	$1,976,554	1.0%
Food & Beverage Services	41	11.5%	$1,790,549	0.9%
Other Services	9	2.5%	$474,152	0.2%
Unknown SIC codes	19	5.3%	$1,373,707	0.7%
Total	**356**	**100%**	**$202,434,345**	**100%**

Source: Revenue Canada Tax Data
Note: Due to rounding totals may not sum to 100%.

Economic Impact Analysis

Economic impact analysis has been undertaken on both the capital investment and the ongoing annual operations impacts associated with the investment. (Details on the results of the survey economic data, methodology, assumptions and full economic impact results are available in Appendix B.)

Results taken from analysis of investment expenditure data, survey analysis and resulting operations are used as the basis for determining a financial cost-benefit and payback evaluation of the ITCM&P program. The results are presented in the following table. These results are only for the tax credits and associated investment in the 1997-October 15, 1998 period. For simplicity, the tax credits were assumed to be fully used and it was assigned to the end of the capital investment period.

Financial Cost-Benefit and Payback Analysis of the Investment Tax Credit for Manufacturing and Processing *(Full Incrementality, No Capital-Labour Substitution)*

Indicator	1997/98	1999	2000	2001	2002	2003
Total Investment ($million): Cumulative:	202.4 202.4	202.4	202.4	202.4	202.4	202.4
Provincial Gov't Revenue ($million): Cumulative	7.5 7.5	11.0 18.5	11.0 29.5	11.0 40.5	11.0 51.5	11.0 62.5
Foregone Revenue ($'000): Cumulative:	60.7 60.7	60.7	60.7	60.7	60.7	60.7
Cost-Benefit Payback to Provincial Government ($million)	-53.2	-42.2	-31.2	-20.2	-9.2	1.8

The economic impact analysis shows in the fifth year of operation after the investment period, the return becomes positive for the provincial treasury. However, the assumption of no capital-labour substitution is not a realistic assumption. Once a proxy for capital-labour substitution was developed from the ITCM&P survey, the payout is not achieved by the provincial treasury until approximately 35 years of operations have passed (see Appendix B for details).

The economic impact analysis assumes that there is full incrementality of capital investment (i.e., capital investment would not have taken place without the existence of the ITCM&P). Given that 26.2 per cent of respondents reported that they would have made the same level of capital expenditures without the credit, this assumption probably overstates the role of the credit to some extent. However, it may be that this investment maintained employment in the province through increased productivity.

Analysis

In terms of efficiency, the parameters of the program are well-known (satisfies predictability), there is flexibility in both the time frame for the investment and the ability to carry the credit forward and back. In terms of administrative efficiency, there are no administrative costs to the Province as CCRA administers it and the corporation only has to complete one additional form. Because it is a non-refundable tax credit it encourages operational efficiencies in the corporations as taxable income and therefore, corporate income tax has to be generated to claim the credit.

Based on the analysis undertaken, it is concluded that the tax measure has achieved its desired result of stimulating new investment, so, it was effective. The credit was initiated by the Department of Economic Development and Tourism to expand the level of manufacturing activity in the Province through expansion of existing capacity and recruitment of new investment. Survey results show that the ITCM&P did change investment levels: 68 per cent of firms would either have lowered, foregone, postponed or moved their investment if there had been no ITCM&P. In terms of manufacturing and processing output, the ITCM&P also had an impact: 53.6 per cent of the companies indicated their manufacturing and processing output would have been lower if the ITCM&P had not been available.

In terms of equity or fairness, there may be questions raised about a tax credit being available for only one type of activity, manufacturing and processing. The CCRA definition may be perceived as making the situation more fair by allowing more firms who engaged in manufacturing and processing activity to be able to obtain the credit, rather than those who are just defined as belonging to the manufacturing sector.

Tax measures must also be considered in the larger financial, social, and economic environment. Once assumptions are made for capital-labour substitution, the payback period for the ITCM&P lengthens considerably to 35 years. Given the current fiscal situation of the Province such a long payback period is not sustainable. It is also possible that all the potential tax credit liability may not be realized as firms have to generate taxable corporate income and income taxes to receive the credit.

There are various measures that the Province could implement to reduce future costs of the program; however, basic fairness requires that the liabilities incurred by the ITCM&P to date must be honoured. The Province could reduce the rate and/or cancel the program. Currently the program is scheduled to expire on December 31, 2002.

Cancellation of the program prior to its legislative expiry is considered detrimental to the business climate of Nova Scotia. This program has become part of the overall business climate and it helps to "level the playing field" regarding the incentives that exist (particularly in many of the American states.)

It is viewed, however, that the effectiveness of the ITCM&P would not be compromised with a lower credit rate. The existing 30 per cent rate relative to Nova Scotia's top corporate rate of 16 per cent means for some that a portion of the credit may never be claimed against claimable taxes payable. This suggests that the rate may be more generous than necessary. The highest rate in other provinces is 10 per cent.

To ensure fairness to companies that have undertaken investments in good faith, but do not have their investment projects completed by December 31, 2000, the rules should remain the same. Provisions would have to be made to have them "grandfathered" in at the existing rate. Changing the credit rate would make the remaining years of the program more financially sustainable for the Province.

Policy Decisions

- As of January 1, 2001 the tax credit rate will be lowered to 15 per cent of eligible investment.
- Investments which are substantially underway by January 1, 2001 will be "grandfathered".
- The credit will continue at the lower rate to its expiry on December 31, 2002.

FILM INDUSTRY TAX CREDIT (FITC)

The Credit in Brief

The Film Industry Tax Credit (FITC) was introduced in the Spring 1995/96 budget and applies to eligible salaries paid after 1994. It is a refundable corporate income tax credit paid to the corporation. The credit is 32.5 per cent of the salaries of Nova Scotia-based labour to a maximum of 16.25 per cent of the total film production budget (both Nova Scotia and non-Nova Scotia production costs) less government assistance (not including federal and provincial tax credits and recoupable government equity investments). The rate was increased to 32.5 per cent from 30 per cent in 1998.

The credit applies to firms with a permanent establishment in Nova Scotia that have at least 25 per cent of salaries and wages payable to Nova Scotians, have assets of less than $25 million, and are registered as producing a film deemed eligible by the Nova Scotia Film Development Corporation (NSFDC). It is possible for a Nova Scotia firm to partner with an outside firm and still be eligible for the credit. Currently tax credit certificates are issued on the completion of a final audited cost report. This program is set to expire December 31, 2000. (See Appendix C for eligibility criteria.)

Film Industry Tax Credit Objectives

The Film Industry Tax Credit was introduced in response to increased film production activity in Canada. The credit was intended to attract film and television productions to the province and aid in the development of a permanent film industry. The credit is based on a percentage of Nova Scotia labour, the rationale being that these expenditures will lead to increased personal income tax and HST revenue.

The Film Industry

There was approximately $3 billion in film and television production activity in Canada in 1998. Nova Scotia is the fourth largest production center in Canada after British Columbia, Ontario and Quebec.

Film production is a labour-intensive industry. Capital assets are typically a small portion of a film production company's total assets. The majority of the firm's assets are intellectual in nature. This lack of physical investment makes film production companies highly mobile when compared to traditional industries. The film industry is not inherently 'permanent' with respect to specific jurisdictions: it takes hold where government incentives are favorable, and vacates jurisdictions where incentives are not.

Typically, film productions rely heavily on financing provided by a variety of provincial and federal tax credits and funding mechanisms. The following table breaks out the average amounts of

funding by source for films produced in Nova Scotia. This information was obtained through a survey of 42 films issued tax credits in the Province.

Average Funding of Nova Scotia Produced Films

Financing Source	Average % of Project Financing
NS Film Tax Credit	9%
Federal Film Industry Tax credit	9%
TeleFilm Equity	21%
NS Film Development Corp. Equity	2%
Other Equity (CBC Primarily)	21%
Licenses	26%
Grants	3%
Advances	9%
Total	**100%**

As indicated in the above chart, film companies do not have a high level of their own equity in their films. Direct provincial sources of funding account for 11 per cent of the financing of a typical film. Financing sources such as the national TeleFilm Fund and the CBC are available to producers across Canada. It is the provincial incentive, however, that is often the deciding factor in where film activity will take place.

"Our filmmakers use the tax credit to lever other funds like the Canadian Television Fund (CTF), Telefilm Canada and other private funds. The CTF has $200 million and Nova Scotia producers generally access approximately 5-7% or $12 million of these monies. ***Our producers would be unable to access these funds without bringing NSFDC investments and the film tax credits to the table."***

The level of government funding plays an important role in the film industry. In Salter Street Films' 1999 Annual Report, it was shown that government funding was 42 per cent of production revenue in 1999. Down from 45 per cent in 1998. Production revenue was 81 per cent of total revenue.

The film maker's skills are quite exportable along with the crews and actors. The investments in the sound stages are not. The activity levels of the industry in this province, and indeed in Canada, is highly sensitive to the level of government funding, and in the case of American productions, the exchange rate with the Canadian dollar.

Participation

Since 1996, $15,976,908 in tax credits has been issued for 80 different film productions under the Film Industry Tax Credit. It is estimated that 60 per cent of this activity took place within HRM.

Film Industry Tax Credit Activity 1995-2000

Year	Productions	Credits
1995/96	6	$1,506,082
1996/97	15	$2,531,733
1997/98	19	$3,215,090
1998/99	27	$6,529,826
1999/00	13	$2,194,177
Total	**80**	**$15,976,908**

However, there are films which have been shot which have not yet applied for the film tax credit which creates a future liability for the Province.

The total cost of the Nova Scotia Film Industry Tax Credit to the Province is estimated at $35.6 million for the fiscal years 1996/97-1999/00. This amount includes both the issued credits and estimated outstanding credits ($19.6 million).

Economic Impact Analysis (see Appendix C for details on methodology and assumptions)

Financial Cost-Benefit of the Film Industry Tax Credit in Nova Scotia - Credit Productions

Economic impact analysis was performed using the NSIO for the1996/97-1999/00 time period on film productions that received the credit or are expected to receive the credit (expenditure estimates have been provided by the NSFDC).

Economic impact analysis of the investment associated with the FITC has been undertaken in order to quantify financial benefits versus costs related to the FITC. The impact analysis simulation was completed using Nova Scotia labour costs, 50 per cent of non-Nova Scotian labour costs and production costs (net of labour). For reporting purposes the impacts are separated into resident and non-resident. These are the impacts associated with Nova Scotia and non-Nova Scotia labour, respectively, along with the impacts of production costs (net of labour) allocated on the same ratio as labour costs using the 50 per cent assumption on non-resident spending. Nova Scotia labour has a larger impact as it is immediately subject to personal income tax and the full amount of labour costs is assumed to be Nova Scotia household income. Only 50 per cent of the income earned by non-Nova Scotia labour is assumed to be spent in the province and non-resident labour is not subject to personal income tax but is subject to HST. However, the spending of this income does provide spinoff household income to the Nova Scotia economy and spinoff household income produces personal income tax (PIT) and HST revenues.

It was assumed that the direct non-resident expenditures would generate spending taxes, even though the non-residents of Canada are able to receive HST rebates on accommodations and purchase of goods for export (goods not being consumed within the Province like restaurant meals).

The table below indicates that for the films that received or will receive a FITC, the benefits generated to the treasury each year were less than the FITC associated with the production. The losses totalled over four years resulted in a total loss to the treasury of $11.6 million. It must be remembered that essentially most of the benefits have been received (1999/00 personal income tax may not be fully received), but $19.6 million in FITC is still outstanding as a future liability to the government.

Cost-Benefit of the Nova Scotia Film Tax Credit, Fiscal Years 1996/97-1999/00
Credit Productions

	1996/97	1997/98	1998/99	1999/00	Total
Film Industry Costs (millions $):					
NS labour	13.8	29.5	30.7	38.7	112.8
Non-NS labour[1]	6.3	13.4	14.0	17.6	51.2
Production costs (net of labour)	21.8	46.6	48.4	61.0	177.7
Total Costs:	41.9	89.5	93.0	117.3	347.7
Prov. Gov't Revenue Generated (millions $):					
Direct:[1]					
Resident[2]	1.6	3.4	3.6	4.5	13.1
Non-Resident[2]	0.1	0.3	0.3	0.3	1.0
Total	1.7	3.7	3.8	4.8	14.0
Spinoff:[3]					
Resident	0.09	2.9	2.0	2.4	8.1
Non-Resident	0.2	0.7	0.5	0.5	1.8
Total	1.1	3.5	2.4	2.9	9.9
Total:					
Resident	2.5	6.3	5.6	6.9	21.2
Non-Resident	0.3	0.9	0.7	0.9	2.8
Total	2.8	7.2	6.3	7.7	23.9
Total Tax Credits (foregone revenue millions $)	4.2	8.9	10	12.6	35.6
Benefit-Cost (millions $)[4]	-1.4	-1.7	-3.7	-4.9	-11.6

Notes

1 Non-NS labour does not pay PIT on their direct household income but they do generate taxes on the spending of household income in the Province.

2 Includes portion of impact of production costs (net of labour).

3 Spinoff household income generates PIT on income (all NS residents) and taxes on spending of that income.

4 The difference between tax revenues generated (direct and spinoff) and tax credits given to the film industry.

5 Totals may not add due to rounding.

Employment Impact of the Nova Scotia Film Industry - Credit Productions

This section estimates the employment impact of the film industry in Nova Scotia related to information supplied on eligible (Nova Scotian) and non-resident wage and salary costs of film productions that received the FITC. The underlying assumption of this section is that these film productions would not have taken place and Nova Scotian employment would not have been generated if the FITC was not in place.

The following table contains the employment impacts of the film industry in Nova Scotia from productions which received or were eligible to receive the Nova Scotia FITC in the period 1996/97-1999/00.

Employment Impacts from Film Productions receiving the Nova Scotia Film Industry Tax Credit, 1996/97-1999/00

Employment (PYs)	1996/97	1997/98	1998/99	1999/00
Direct:				
Resident	400	845	880	1105
Non-Resident	180	380	400	500
Total	580	1225	1280	1605
Spinoff:				
Resident[1]	285	955	665	785
Non-Resident[1]	65	215	150	180
generated				
Total	350	1170	815	965
Total:[2]				
Resident	685	1800	1545	1890
Non -Resident	65	215	150	180
Total	750	2015	1695	2070

Notes

[1] Includes employment impacts of production costs net of labour.

[2] Direct non-resident labour is not included in the total. However, the spinoff non-resident employment is Nova Scotia employment generated by the spending of non-resident income in the province.

Employment has been expressed on a person-year or full-time equivalency basis in the preceding table. It will not match job figures often used by the industry as people can have multiple jobs during the course of the year in different productions but only be working one full person-year. This analysis reduces the impact of double counting. The analysis has assumed an average annual wage/salary of $35,000 without benefits (supplied by NSFDC), a substantial difference from this assumption would change the estimate. A higher average annual wage would result in an

overestimate of employment benefits; a lower average annual wage would result in an under-estimation of employment.

Financial Benefit of Film Industry Non-Credit Productions in Nova Scotia

It is the NSFDC view that non-credit receiving productions (those productions not eligible for the credit) should be included when measuring the benefits of the credit. Underlying this argument is the assumption that the FITC is directly responsible for the existence of the Nova Scotia film industry, and therefore, the benefits generated by the non-credit productions are also attributable to the FITC.

The assumptions used for the measurement of economic impacts of credit productions are also used for the measurement of non-credit productions. Total provincial government revenue is also reported on the same basis as the cost-benefit table on credit productions. (Further details on methodology, assumptions and additional subsidies and government assistance programs are included in Appendix C.) The following table shows that over the four-year period analyzed, non-credit production produced a total benefit of $3.7 million for the Nova Scotia treasury.

Benefits of the Non-credit Productions, Fiscal Year 1996/97-1999/00:
Non-Credit Productions

	1996/97	1997/98	1998/99	1999/00	Total
Total (Provincial Gov't Revenue)	0.3	0.6	1.6	0.8	3.3
Resident	0.04	0.08	0.2	0.1	0.4
Non-Resident	0.4	0.7	1.8	9.2	3.7
Total (millions $)					

Notes

1 Non-NS labour does not pay PIT on their direct household income but they do generate taxes on the spending of household income in the province.

2 Includes portion of impacts of production costs (net of labour).

3 Spinoff household income generates PIT on income (all NS residents) and taxes on spending of that income.

4 Totals may not add due to rounding.

Financial Cost-Benefit of the Film Industry Tax Credit in Nova Scotia Using Credit and Non-Credit Film Productions

The following table summarizes the financial cost-benefit analysis of the FITC in Nova Scotia for the combined benefits attributable to both credit and non-credit film productions for the period 1996/97-1999/00. This table shows the difference between the tax revenues generated (direct and spinoff) for both credit and non-credit film productions and the tax credits given to the film industry. All estimated economic activity due to film production is considered a one-time only

occurrence. Once production is over, economic activity ceases with no further annual ongoing activity.

Cost-Benefit of the Nova Scotia Film Tax Credit Including Credit and Non-Credit Film Productions, 1996/97-1999/00 (millions $)

	1996/97	1997/98	1998/99	1999/00	Total
Cost-Benefit	(1.0)	(1.0)	(2.0)	(3.9)	(7.9)

This table shows that if one factors non-credit production into the cost-benefit analysis, the existence of the FITC has resulted in a net loss of $7.9 million to the provincial treasury over a four year period. Given the nature of the film industry, the impacts are considered one-time only occurrences so the investment cannot be recouped in ongoing annual activities as it can with some other credits offered by the government.

Incrementality of FITC

Taking into account the information supplied by the Nova Scotia Film and Television Producers Association relating to the experiences of Ontario and Alberta and from British Columbia's record-breaking year for its industry, it is recognized that a diminution of the tax credit program in Nova Scotia would have negative consequences for continued expansion and growth for the provincial industry. Nova Scotia has to remain competitive with other jurisdictions in granting tax credits and other incentives to receive the film industry dollar. From the experiences of other provinces, it is concluded that the economic impact of the film industry tax credit program is incremental and film and TV activity may not be undertaken or would be greatly diminished without its existence. A fuller discussion of this issue is found in Appendix C.

The industry is very sensitive to the level of government funding. Analysis of funding sources has shown that film companies do not have a high level of their own equity in their own films. Indeed it almost seems like the FITC is treated as their equity. The NSFDC has indicated that "[o]ur producers would be unable to access these funds [Canadian Television Fund, Telefilm Canada and other private funds] without bringing NSFDC investments and the film tax credits to the table."

The points raised above suggest that the film industry would not survive at its current level without the FITC.

Issues of Equity

The FITC raises a number of equity issues. There is the question of whether one industry should be favoured for tax credit over another. The FITC certainly leads to demands for special tax treatment on the part of other entertainment/cultural industries.

There is a question of equity regarding the treatment of firms within the industry. Currently there is an asset cap which precludes firms with more than $25 million in assets from accessing the tax credit.

Given the time frame, limited resources, and tax data availability, an evaluation of a tax credit is not the proper place to debate the value of the entire film industry to Nova Scotia. This should be considered in the context of an economic development strategy for the Province. However, the financial cost-benefit analysis does raise concerns about the level of support provided to the industry by the Province through the Film Tax Credit and other financing vehicles.

Policy Decisions

Tax measures must also be considered, however, in the larger financial, social and economic environment. Cultural arguments , forward linkages (e.g., claims that movies generate tourism), and attractiveness of the industry to youth have been put forth as arguments promoting provincial government support of the film industry. The analysis undertaken in this report does not examine these arguments.

Policy Decisions

- The FITC will be extended for two years until December 31, 2002.
- During this time period an in-depth analysis of the film industry will be undertaken to determine its value and the mix of government programs and assistance that would be appropriate.
- The asset cap will be removed.
- The tax credit rate will be reduced from 32.5 per cent to 30 per cent in urban areas. The rate will be increase to 35 per cent in rural areas to help promote increased activity in these areas of the province.
- The Department will work with the NSFDC to define the rural/urban eligibility criteria.

NOVA SCOTIA RESEARCH AND DEVELOPMENT TAX CREDIT (R&D)

The Credit In Brief

Nova Scotia has had a Research and Development Tax Credit (R&D) since 1984. Originally, it was a 10 per cent non-refundable corporate income tax credit on expenditures incurred in Nova Scotia that were considered eligible for the federal Scientific Research and Experimental Development (SRED) Tax Credit (see Appendix D for further details on eligibility criteria). The April 29, 1994 provincial budget made a number of changes to the program. All qualified expenditures incurred in taxation years ending after December 31, 1993 are subject to a 15 per cent rate and the tax credit became refundable.

Research and Development Tax Credit Objective

The R&D tax credit was implemented to encourage research and development in Nova Scotia.

Participation

Analysis was conducted on a large subset of 1997 R&D credit filer data supplied by the CCRA. In that year's data set, there were 166 companies, filing 172 claims, spending $47.2 million on research and development. This generated a provincial tax credit liability of $7.1 million. Of the 147 firms that identified themselves according to the Standard Industrial Classification (SIC) code, the largest number of firms that undertook research and development were in the Manufacturing, Business Service, and Wholesale Trade sectors, respectively. In terms of credit expenditures, the majority (52.1 per cent) were made by the Manufacturing sector, followed by the Business Services sector (25.2 per cent). The following table illustrates the number of firms in each sector and the percentage of total eligible expenditures each sector represents. This accounts for approximately 88 per cent of total eligible expenditures in the 1997 data set.

Participation in the Nova Scotia Research & Development Credit by Industry, 1997

	Number of Firms	Percentage of Firms	Percentage of Expenditures
Natural Resources	13	8.8	3.7
Construction	4	2.7	0.8
Manufacturing	59	40.1	52.1
Transportation & Communications	4	3.7	4.2
Wholesale Trade	17	11.6	13.6
Business Services	45	30.6	25.2
Health	4	2.7	1.2
Government	1	0.7	0.1

The largest individual credit exceeds $700,000 while the smallest credit is under $100.

There are various types of activities that are classified as research and development. According to the table below, the largest portion of research and development activity that was eligible for a tax credit in the 1997 data set was for new product development in Nova Scotia (48 per cent) with applied research and development being the next largest category.

Distribution of Research & Development Expenditures by Type of Activity[1]

Research & Development Activity	% of Total Research & Development
New Product Development	48
Applied Research & Development	19
Product Improvement	10
Basic Research & Development	9
New Process Development	9
Other Not Specified	5
Total	100

Notes

[1] Derived from the proportion of research and development activities allocated to various types of research and development and the ratio of Nova Scotia salaries to federal salaries.

Geographical analysis of tax data is limited by the fact that the tax return reflects only the address of the filing office, not where actual expenditures may have occurred. In terms of the number of companies filing tax credit claims, almost all the claimants sourced were Nova Scotia-resident firms with three headquartered in Ontario. A cursory analysis of the data suggests that the

majority of firms and eligible expenditures were from firms that had Halifax Regional Municipality filing addresses.

The division between in-house and contracted-out research and development expenditures are estimated at 80 per cent and 20 per cent, respectively. (Further details on the results of the federal and provincial surveys on research and development are contained in Appendix D.)

Survey

There were 104 surveys mailed to firms receiving an R&D tax credit resulting in a response rate of 36 percent. Without the tax credit, the majority of firms (78 per cent) reported that research and development expenditures would have been lowered, postponed, forgone or moved to another jurisdiction. Over 80 per cent of firms indicated that Nova Scotia based research and development made at least a moderate contribution to their sales, for 63 per cent of the firms it was judged to be a very important contribution. For more details on the federal and provincial surveys, see Appendix D.

Economic Impact Results

Economic impact analysis using the NSIO can only be done on the eligible research and development investment expenditures, as information is not available on the ongoing operations associated with this investment. The ongoing operations associated with this investment would be expected to produce returns to the firms and to the provincial treasury on an annual basis unlike the investment expenditures which are a one-time only impact (further details on methodology and key assumptions are included in Appendix D).

The research and development expenditures of $47.2 million are divided into capital expenditures of $2.8 million and current expenditures of $44.4 million. Appendix D provides the detailed impacts on both current and capital expenditures.

The following table illustrates the economic impacts of the total expenditures of $47.2 million. The vast majority ($34.6 million) are assumed to be wages and salaries with a much smaller amount assumed to be expenditures on materials ($9.8 million). Capital equipment purchases of $2.8 million were assumed to be machinery and equipment.

Economic Impacts of 1997 Research and Development Expenditures

	Direct	Spinoff	Total
Household Income (millions $)	35.0	13.3	48.3
Employment (person-years)	1040	460	1500
Provincial Government Revenue ($'000)			
Income Taxes	2.1	0.7	2.8
Spending Taxes	1.2	0.4	1.7
Total	**3.3**	**1.1**	**4.5**

Note: Totals may not add due to rounding.

In total, research and development expenditures eligible for the R&D credit supported direct employment of 1,040 and total employment of 1,500. Associated household income amounted to nearly $35 million and $48.3 million, respectively. The total (direct and spinoff) return to the provincial treasury based on these expenditures was $4.5 million. The estimated total refundable tax credit was $7.1 million. This suggests a net loss of $2.6 million to the provincial treasury. It must be remembered however, that the analysis is incomplete as it has not been able to measure the economic impacts of ongoing activities associated with the original investment. Investment in research and development is in the nature of a seed investment (investment in the beginning of a company or new product or process which is expected to add to the company's revenue base in future years) with the payback of the initial investment expected after some years.

Qualitative Considerations

Research and development is important to the economy. Research and development by firms has "spillover benefits" to other firms and/or society at large. It influences long-term growth, provides a demand for science and technology graduates and can lead to important developments in "quality of life". Unfortunately, research and development is subject to market failure. Since firms can not capture all the benefits of its own research and development, they will be less likely to perform it. Further comments on qualitative consideration are found in Appendix D.

Having a research and development tax credit in place sends a signal to the business community that research and development is important. Removing such a signal can reduce government's credibility in this area and has other implications for the perception of the business climate in Nova Scotia. (Further comments on qualitative considerations are provided in Appendix D attached.)

There is one feature of the Nova Scotia Research and Development Tax Credit that deserves particular attention. Unlike the federal tax credit, the Nova Scotia credit allows firms to claim credits on contract work undertaken on behalf of and paid for by government and their agencies.

This is called stacking and is not allowed for other tax credit programs. In the interest of equity, it should be discontinued for this program.

Policy Decisions

- ! Research and development will be encouraged as a matter of public policy.
- ! The Nova Scotia Research and Development Tax Credit will continue.
- ! "Anti-stacking" rules will be implemented.
- ! A comprehensive review of this tax credit will take place when there is enough data to fully evaluate the credit (i.e., allow time for some of the research and development efforts to come to fruition).

ISO9000/ISO14000 TAX CREDITS

The Credit in Brief

The ISO9000/ISO14000 Tax Credits are non-refundable corporate income tax credits designed to assist Nova Scotia corporations with the cost of becoming ISO9000/ISO14000 certified. The credits are for 25 per cent of total eligible expenditures, to a maximum of $150,000 per corporation. The credits cannot be carried-forward but must be used in the year of application. The credits apply to all corporations in all industries. Eligible expenditures include audit, training, and documentation expenditures that are directly attributable to ISO certification and these expenditures must be incurred to certify a permanent establishment in Nova Scotia. Firms must apply to the Department of Finance for a tax credit certificate that is filed with the T2 Corporate Tax Return.

ISO9000 is an internationally recognized standard of quality management. In many industries, ISO9000 certification has become a prerequisite for companies to compete for contracts. The ISO14000 certification applies to environmental management systems standards and is widely used in Europe and Japan. The ISO14000 certification signifies that the corporation has an environmental management system that is internationally recognised. Apart from the obvious environmental benefits, ISO14000 certification is a prerequisite to compete for contracts in many industries.

ISO9000/ISO14000 Tax Credit Objectives

- To encourage Nova Scotian firms to seek ISO9000 Certification and improve the competitive position of Nova Scotia firms.
- To help improve Nova Scotia's environmental management standards by encouraging firms to become ISO14000 compliant.

Participation

From 1994 through to December 31, 1999, 121 applications submitted by 84 different companies have generated $1.1 million in tax credits through the ISO9000 tax credit program.

Summary of Activity - ISO9000 Tax Credit 1994-99

Tax Year	# Applications	Total Tax Credits
1994	8	$124,970
1995	13	$127,797
1996	25	$195,153
1997	31	$324,954
1998	34	$198,147
1999	10	$92,424
Totals	**121**	**$1,063,445**

To date, only two corporations have received assistance under the ISO14000 tax credit totaling approximately $30,000.

The following table outlines the activity by industry grouped according to Standard Industrial Classification (SIC) code. Manufacturing firms comprise the largest number of firms that were involved in this tax credit, followed by Wholesale Trade firms and Business Services (e.g., consulting) firms.

Activity by Industry - ISO9000 Tax Credit 1994-99

Industry	# of Companies	% of Total
Manufacturing	38	45%
Construction	2	2%
Transportation	7	8%
Wholesale	15	18%
Retail	2	2%
Business Services	13	16%
Other Services	7	8%
Totals	**84**	**100%**

The following table displays program participation by geographical region. The Halifax Regional Municipality (HRM) had the majority of firms participating in the program.

Activity by Region - ISO9000 Tax Credit 1994-99

Region	# of Companies	% of Total
Cape Breton	3	3.5%
Eastern	6	7%
Northern	14	17%
HRM	54	64%
Valley	3	3.5%
South Shore	2	2%
Western	2	2%
Totals	**84**	**100%**

Survey

To assist in the evaluation of this credit a survey was undertaken. Questionnaires were sent to all Nova Scotia ISO9000 registered companies (196 firms) with 41.3 per cent returning completed surveys.

Respondents most commonly identified three reasons for obtaining certification: retention of existing markets (76 per cent); accessing new markets (67 per cent); and improving productivity (62 per cent).

The survey results do not indicate that the tax credit has had a large impact on the number of certified firms. When asked the reasons for seeking certification, the overwhelming response was for competitive reasons: the firm had to be certified to retain market share. The majority of firms did not indicate that the tax credit made a major impact on their decision to become certified. Fifty per cent of respondents indicated that the tax credit was of no consideration in obtaining certification. It is estimated that just over 60 per cent of the companies who were eligible to receive the credit, applied. Although the tax credit may have had a very limited impact on the decision to become certified, the credit does seem to have encouraged firms to spend more on the certification process. The credit, therefore, has created an indirect benefit for management consultants. (Further survey results are detailed in Appendix E.)

Economic Impact Analysis

An economic impact analysis was not done on this credit. On an annual basis the impacts of the expenditures undertaken to qualify for this credit would have had very limited impact because of the relatively small amount of expenditures involved. As well, a complete economic analysis would have required isolating the effects of ISO certification on the corporation and then determining the incremental impacts of the tax credit on the future operations of certified firms. The data did not exist to produce such a benefit estimate.

Analysis

Tax credits are being evaluated against the principles of efficiency, effectiveness and equity as well as other considerations.

In terms of efficiency, a tax credit should be predictable, flexible and transparent. The parameters of the program are available (predictability) and therefore, companies are able to know the results of their decisions (transparent). Flexibility is somewhat strained by the fact that this tax credit is non-refundable and must be claimed in one year. It is necessary to have taxable income to receive its benefit. Of those respondents that did not apply for the credit, 18 per cent reported having no corporate tax payable.

There are administration costs for the firms since they must apply for a tax credit certificate and administration costs for the government as the Department of Finance must administer the granting of this certificate.

The effectiveness of the credit must be judged against the objectives for the credit: to encourage Nova Scotian firms to seek ISO9000 certification and improve the competitive position of Nova Scotia firms; and to help improve Nova Scotia's environmental management standards through ISO14000 certification. The policy aims of the ISO9000 tax credit are valid and certification has had a positive impact on the Nova Scotia economy. The tax credit, however, has probably not impacted to any large degree the total number of certified firms. In terms of ISO14000, there are only two firms which have applied for the tax credit.

In terms of equity, the credit is available to all companies in all industries who wish to pursue the certification process and who have taxable corporate income.

Survey results indicate that the tax credit did not make a major impact on the decision of the firm to become ISO certified.

Policy Decision

! The ISO9000 and ISO14000 tax credits will expire on December 31, 2000.

HARMONIZED SALES TAX (HST) REBATES

Nova Scotia Sales Tax System

On April 1, 1997, the Province of Nova Scotia and the federal government introduced a harmonized sales tax system, the HST. Several changes to the sales tax system occurred during the process. Steps were taken by the Province, at that time, to compensate, at least in part, for the additional sales tax burden which occurred in certain areas. The initial phase of the Tax Credit Review includes two rebate programs of the HST system: the municipalities, universities, schools and hospitals (MUSH) rebates and the charities and non-profit organization rebates (further details on HST changes contained in Appendix F attached).

MUSH Sector Rebates

The MUSH sector is comprised of municipalities, universities (and colleges), schools and hospitals. Prior to the Goods and Services Tax (GST), there was the Federal Sales Tax (FST). Under the FST system, these entities paid taxes that were hidden in the price of manufactured goods. The federal government, when it introduced GST in 1991, offered rebates to these entities in an amount that it judged that the effects of the GST would be neutral; that they would not have to pay any additional taxes. The rebates were set at the following amounts: municipalities, 57.14 per cent; universities and colleges, 67 per cent; schools, 68 per cent; and hospitals, 83 per cent.

Prior to the HST, the Province had the Health Services Tax (PST). Under the operation of the PST, the MUSH sector was mainly exempt from taxes on tangible personal property, while being subject to a 90 per cent rebate of PST on construction contracts. The Province opted to match federal GST rebate rates for the MUSH sector when the HST was introduced. The Province chose to mirror the federal rebate rates in order to minimize the administrative and compliance burden, while easing the burden of transition to the HST. The CCRA administers the MUSH rebate program.

Organizations can file annually, monthly or quarterly with the CCRA the amount of GST paid and therefore, the amount to which they are entitled to have rebated. Since a particular entity has the option of filing multiple rebate claims during the same year, the data provided below may include multiple claims from the same organization. The table below is based on claims filed with a period end date of 1998. It is possible that some of the claims could include activity that took place in 1997. However, this could also be true for activity that took place in 1998 that will not be claimed until 1999. It is assumed that on balance the figures below are representative of the annual flow of rebate claims.

MUSH Sector HST Rebate Claims, 1998

Entity Type	Total # of Rebate Claims	Total Rebates Claimed (millions$)
Municipalities	568	$14.5
Universities	93	$6.4
Colleges	4	$.009
Schools	211	$5.4
Hospitals	247	$14.7
Total	**1,123**	**$41.0**

Note: Totals may not add sue to rounding.

Analysis

This tax rebate program needs to be examined in accordance with the principles of efficiency, effectiveness and equity. In terms of efficiency, this tax credit program has not added any additional administrative burden to the MUSH sector as they already had to file for a GST rebate. It does not add any burden to the provincial government as the CCRA handles its administration. It is a more efficient method than trying to design a system to administer rebates at point-of-sale.

The MUSH sector is closely associated with government, and in some cases is almost totally funded by government. This sector helps the government to carry out its public policy objectives either through direction (e.g., school and hospitals) or indirectly in its operation for the public good (e.g., universities and municipalities). If the HST rebates were reduced or eliminated it would increase costs to these organizations. Therefore, it would be counterproductive to lower or eliminate the HST rebate as that would add additional costs to this sector and make the achievement of some of the policy objectives more difficult and would result in requests for additional government funding. The effectiveness principle would preclude any reduction or elimination of the HST rebate for the MUSH sector.

The existence of the HST rebate tries to bring a level of fairness or equity to the taxation of this sector.

Policy Decision

! The present level of HST rebate will continue for the MUSH sector.

Non-Profit Organization and Charity Rebates

To be eligible for a tax rebate, a non-profit organization (NPO) must be at least 40 per cent government funded and a charity must be registered for purposes of the federal *Income Tax Act*. The rebates were implemented when the federal government introduced the GST in 1991. Prior to this, NPOs and charities paid the buried FST on manufactured goods. The original intent of the GST rebates was to ensure the tax burden with respect to NPOs and charities remained unchanged. The Province chose to mirror the federal rebate rates in order to minimize the administrative and compliance burden, while easing the burden of transition to the HST. Generally, the NPOs and charities paid PST on current expenditures, but received a 90 per cent rebate on capital expenditures (depreciable assets).

The tax rebates are set for 50 per cent of GST paid for both qualifying NPOs and charities. Under the HST, qualifying NPOs and charities are eligible for a 50 per cent rebate of HST paid on their purchases. Commercial enterprises operated by charities can be registered as a business operation. They can charge the HST on their taxable sales and receive input tax credits (ITCs) on their taxable purchases. When they claim ITCs, this is equivalent to a 100 per cent rebate of the HST they paid on their purchases. Organizations can file multiple rebate claims during the same year, since they have the option of filing annually, monthly or quarterly. The data provided below are based on claims filed with a period end date in 1998. There is no allowance for claims that overlap prior years. Thus, the total amount claimed may include some activity that took place in a prior year. The data provided below exclude claims filed with a period end date after 1998 that overlap 1998. It is assumed that on balance, the figures below are representative of the annual flow of rebate claims. Some charities make foreign exports, which are subject to 100 per cent rebate of any embedded HST. In 1998, charity export rebates amounted to an additional $4,000 not reported below.

NPO and Charity Rebate Claims, 1998

Entity Type	Total # of Rebate Claims	Total Rebates Claimed (millions$):
Non-Profit Organizations	339	$0.6
Charities	1,890	$3.1
Total	**2,229**	**$3.8**

Note: Totals may not sum due to rounding.

Analysis

This tax rebate program needs to be examined in accordance with the principles of efficiency, effectiveness and equity. In terms of efficiency, this tax rebate program has not added any additional administrative burden to the organizations as they already had to file for a GST rebate. It does not add any burden to the provincial government as the CCRA handles its administration and it is a more efficient method than trying to design a system to handle it at point-of-sale.

Given that NPOs have to be at least 40 per cent government funded to qualify and that charities have to meet some public good qualifications from the CCRA, it is a fair statement to make that NPOs and the charities help the government achieve some of its policy objectives (e.g., providing shelter to battered women, public education, providing food to people in need, etc). Therefore, it would be counterproductive to lower or eliminate the HST rebate as that would add additional costs to these organizations and make achievement of some of the policy objectives more difficult and would result in requests for additional government funding.

The existence of the HST rebate tries to bring a level of fairness or equity to the taxation of this sector.

Policy Decision

! The present level of HST rebate will continue for NPOs and charities.

GENERAL COMMENTS

The initial phase of the review has been a challenging project in light of data availability and the limited time frame in which to complete the analysis, however, there are policy decisions that emerge that have significance for tax policy. Such changes will have no financial impact on the Province in the 2000/01 year. The impact will start to be realized in the 2002/03 year.

The current tax credit system has emerged over many years. Conditions change. Over time the objective may have been achieved or it may no longer be a policy objective of government. It may be that the program is not efficiently designed, it may have unintended consequences or it could be working perfectly. This phase of the review has demonstrated the importance of on-going review and evaluation of provincial tax credits.

Evaluation of some of these credits and rebates was very difficult given the data availability and the lack of clear measurable objectives. In the future, tax measures should be designed for evaluation and monitoring on a set schedule, allowing time for enough data to be collected to evaluate the measure.

Policy Decisions

- Government will continue to evaluate all provincially administered tax credits on an on-going basis.
- All future tax measures will be designed so they are easily evaluated and an evaluation framework and schedule will be part of the design of the tax measure.

APPENDIX A

EQUITY TAX CREDIT (ETC)

Eligibility Criteria

To be certified under the ETC program, an organization must meet the following criteria:

- corporations/cooperatives must be involved in active business or investing in other eligible businesses with less than $25 million in assets
- corporations/cooperatives must pay at least 25 per cent of its salaries and wages in Nova Scotia
- co-operatives must be marketing, producing or employee co-operatives
- corporations must have authorized capital consisting of shares without par value
- corporations must have at least three eligible investors taking part in the specified issue.

Corporations must apply to the Department of Finance for certification prior to the issuance of shares. The company is certified for a specified period, usually 90 days, during which time eligible investors who purchase newly issued, common shares of the corporation will receive the credit. The offering must comply with the Nova Scotia *Securities Act*. It is the responsibility of the corporation to determine whether the offering is in compliance with or is exempted from the Act. Generally speaking, private corporations selling to a limited number of investors can obtain exemptions under the *Securities Act* and thereby avoid filing a prospectus. This eliminates one of the principal drawbacks of equity for most corporations, which is the high cost of issuing shares to the public.

Registration for the ETC is available to both new and existing companies. Between 1994 and 1998, 62.4 per cent of corporations receiving certification were start-ups.

Start-Ups versus Expansion of ETC Certified Companies, 1994-98

Year	# of Companies	Expansions	Start-ups
1994	9	2	7
1995	26	7	19
1996	34	12	22
1997	63	26	37
1998	65	27	38
Totals	**197**	**74**	**123**

At the time of application, 74 companies were classified as existing corporations. These corporations averaged approximately $175,000 in assets.

Performance Measures

Survival Rates

The following table displays survival rates for all start-up corporations (as of January 2000) certified under the ETC from 1994 to 1997:

Survival Rates of ETC Certified Start-Up Companies, 1994-97

Year Started	# of Companies	Still in Business	Survival Rate
1994	7	4	57%
1995	19	14	74%
1996	22	19	86%
1997	37	30	81%
Totals	**85**	**67**	**79%**

The following table displays survival rates for all corporations (as of January 2000) certified under the ETC from 1994 to 1997:

Survival Rates of All ETC Certified Companies, 1994-97

Year	# of Companies	Still in Business	Survival Rate
1994	9	6	67%
1995	26	19	73%
1996	34	29	85%
1997	63	52	83%
Totals	**132**	**106**	**80%**

The following analysis on financial performance measures was based on the financial statements of 31 corporations certified under the ETC program from 1994 to 1997. The study was conducted to determine the performance of these companies in the periods following certification. The companies selected represent a range of economic sectors and geographical areas. All companies were still in business as of January 2000. The study, therefore, does not include bankrupted or discontinued businesses.

Revenues

The average annual change in revenues was positive for all of the economic sectors. Overall, the corporations experienced an 89 per cent increase in revenues for the year following the ETC-certified investment, and a further 33 per cent increase in the second year.

These figures are consistent with the results of the survey in which 74 per cent of respondents reported a large or moderate increase in revenues following certification.

Profitability

Generally speaking, the companies studied were not very profitable. In Year 0, the year of certification, the companies recorded an average loss of $25,309. This figure increases to $68,445 in Year 1. This number is somewhat skewed, however, by the results of two companies that lost a combined $1.7 million in Year 1. In Year 2, the companies reported a modest average profit of $3,405.

These results are somewhat inconsistent with the survey results in which 63 per cent of respondents reported a large or moderate increase in corporate profits.

It should be noted, however, that the majority of firms applying for certification under the ETC and the majority of firms included in the above mentioned study, are start-up businesses. Approximately 75 per cent of the existing corporations applying under the ETC have been in business for less than three years prior to certification. Therefore, most firms participating in the ETC program are in the high-growth period of the corporation's life cycle. Firms in a high-growth period often cannot fund their growth exclusively through corporate earnings, and therefore must access funds through external sources, either through debt/equity, or both. These firms commonly exhibit strong revenue growth but only modest profitability. The results of the corporations studied are in many ways consistent with what would generally be expected from new corporations.

The following table displays percentage changes in revenues for the selected companies.

Revenue Growth, Selected ETC - Certificated Companies

Industry	Year 1	Year 2
Primary	+ 47%	+ 23%
Manufacturing/Construction	+ 64%	+ 26 %
Retail/Wholesale	+ 25%	+ 45%
Services	+ 92%	+ 29%
Overall	+ 89%	+ 33%

Payroll

The average annual change in payroll expenditures was positive for all of the economic sectors. Overall, the corporations doubled payroll expenditures in the period following certification, and increased payroll expenditures by 51 per cent in Year 2.

These results are consistent with the survey response in which 70 per cent of respondents reported a large or moderate increases in employment in the periods following certification.

The following table displays percentage changes in payroll expenditures for the 31 selected companies.

Changes in Payroll Expenditures, Selected ETC-Certified Firms

Industry	Year 1	Year 2
Primary	+ 11%	+ 42%
Manufacturing/Construction	+ 54%	+ 21%
Retail/Wholesale	+ 39%	+ 97%
Services	+ 138%	+ 43%
Overall	+ 100%	+ 51%

Liquidity

Financial ratios of the 31 firms were examined in the two years following ETC investment to see if ETC certification has affected the relationship between debt and equity in the capital structure of participating firms. Three ratios were calculated: current ratio; debt-to-equity ratio; and total debt-to-asset ratio.

As a group, the corporations studied experienced an improvement in the three financial ratios calculated in the two periods following certification.

These findings should be considered in conjunction with the survival rates of participating firms and the survey results in which 92.9 per cent of respondents indicated that the ETC encouraged them to seek equity over debt financing. Taken as a whole, this evidence indicates that the program has met a key policy goal: the ETC has positively influenced the mix of equity and debt in the capital structure of participating firms.

Current Ratio

The current ratio is a commonly used measure to calculate the firm's ability to meet short-term commitments. It is calculated by dividing current assets by current liabilities. The higher a firm's current ratio, the greater will be its ability to meet short-term liabilities from short-term assets. The following table displays the average current ratio for 31 corporations studied from the year of certification (Year 0):

Average Current Ratio, Selected ETC-Certified Companies

Year 0	Year 1	Year 2
1.36	1.51	1.97

The firms showed a positive trend with respect to current ratio. A current ratio of 2 is often cited as a suitable value.

Debt-to-Equity

The debt-to-equity (D/E) ratio is a commonly used measure of the safety margin that shareholders have in the event of liquidation. It is calculated by dividing long-term debt by tangible net worth. "Tangible net worth" can be determined several ways. For purposes of this study, tangible net

worth was the sum of the contributed capital and retained earnings.

A decreasing D/E ratio indicates a decreasing amount of long-term debt as a portion of net worth. The following table displays the average D/E ratio for 31 corporations studied from the year of certification (Year 0):

Average Debt-to-Equity Ratio, Selected ETC-Certified Companies

Year 0	Year 1	Year 2
1.58	1.53	0.51

D/E ratios can vary widely from sector to sector, and the above numbers, being an average of several economic sectors, are not revealing in and of themselves. It should be noted, however, that on average the D/E ratios did decline for the group.

Total Debt-to-Assets

Perhaps the most relevant measure for purposes of this study is the total debt-to-assets ratio (D/A). The D/A ratio is calculated by dividing total debt by total tangible assets. This ratio measures the proportion of tangible assets financed through debt. A decreasing D/A ratio indicates a decreasing reliance on debt. The following table displays the average D/A ratio for 31 corporations studied from the year of certification (Year 0):

Average Debt-to-Asset Ratio, Selected ETC-Certified Companies

Year 0	Year 1	Year 2
0.68	0.67	0.46

Survey Analysis

Surveys were mailed to 110 companies who had been certified under the ETC program. Twenty-eight surveys were returned giving a response rate of 25 per cent. The profile of the companies that replied show relatively young companies with a small number of employees with some export component. The majority of the companies that replied (60 per cent) commenced operations in the 1995-1999 period, with 30 per cent beginning operations between 1990 and 1995 and 11 per cent, before 1990. Fifteen of the companies reported less than ten employees and three of the companies reported 30 or more employees. Only five companies reported that 100 per cent of their sales were in Nova Scotia, with eighteen companies reporting interprovincial sales and fifteen companies reporting foreign exports.

The equity raised through shares varied between $20,000 to just over $4 million, with 61.5 per cent of the companies raising $100,000 or less. The use of this equity varied between purchase of capital equipment (64.3 per cent), working capital (50 per cent), facility expansion (42.9 per cent) and other (17.9 per cent). Some companies reported more than one use but no companies used the equity for debt repayment.

Since participation in the program, 71.4 per cent reported an increase in the number of employees and 75 per cent reported an increase in sales revenue. Again the majority noted both an increase in profits (64.3 per cent) and an increase in productivity (71.4 per cent).

In terms of the objectives of the ETC program, 92.9 per cent agreed that the ETC encouraged equity financing as opposed to debt, and for 89.3 per cent it allowed the corporation to obtain equity financing that was otherwise unavailable. The majority of the companies in this survey, 75 per cent, would not have started or expanded without the ETC. Overall 85.7 per cent of respondents agreed that the ETC has had a positive effect on the corporation.

Key Assumptions Used in the Impact Study

The following assumptions apply to company-supplied expenditure data for use with the NSIO Model:

- All data were assumed to be in current dollar terms in the year that the credit and the investment were made. No adjustment was made for inflation.
- There was no time lag between receiving the credit and the application of the investment made by the company. In other words, if the company received the credit in a specific year, the investment was assumed to be undertaken in that year.
- Plant construction expenditures were placed in the Non-residential Construction sector of the NSIO Model.
- All capital equipment was assumed to be imported and was placed in the Import sector of the NSIO Model (capital investment is a "leakage" to the Nova Scotia economy). No allowances were made for wholesale/retail margins or installation costs which were small in any case.
- Total working capital operating costs were provided by the companies but were not further subdivided into an itemized cost structure. In order to itemize total operating costs for inclusion in the NSIO Model, it was assumed that total operating costs are consistent with the operating cost structure of Nova Scotia industries as contained in *Small Business Profiles: Statistics Canada Cat. No. 61f0015xdb.*
- Company-supplied data was categorized by its Standard Industrial Classification (SIC) code for application to the industry structure of the NSIO Model.
- The NSIO Model automatically includes fringe benefits in all household income calculations. Therefore, they were appropriately scaled down to eliminate fringe benefits from the Model results in calculating the impact on provincial government revenues.

The following assumptions were made to do an impact simulation on annual operations of the companies.

- All increased labour expenses from the year following the investment were assumed to be associated with the investment. For new companies, all labour expenses were assumed to be associated with the investment. The impact simulations were conducted only on Nova

Scotia labour.

- For companies that received an ETC investment but did not exist as of January 1, 2000, they were assumed to have remained in existence for two years after the investment year.
- Employment, wages and salaries and provincial government revenues were assumed to be continue at 1999 levels.
- In addition to the assumptions outlined above it was assumed that the investments are incremental.

Survey of Similar Programs in Other Provinces

NWT Investment Risk Capital Investment Tax Credit: This program came into effect in 1999 and provides a 30 per cent tax credit for investments in Northwest Territories and Nunavut businesses. The credit is applicable against Northwest Territories income tax payable, to a maximum credit of $30,000 per year (maximum $100,000 investment). The credit is non-refundable, but can be carried back three years and forward seven years.

The purpose of the credit is to encourage northerners to invest in northern business operations.

The Manitoba Equity Tax Credit: This program provides a personal tax credit to Manitoba residents who purchase the shares of small and medium-sized Manitoba companies listed on the Winnipeg Stock Exchange. The credit is for five per cent of the investment per year up to three years. The maximum credit is $1,500 per year per individual. This credit will become effective in 2000.

Ontario: Ontario created the "Community Small Business Investment Funds" program in 1997. Like the Nova Scotia Community Economic Development Funds, the Ontario funds are designed to provide capital for small, local growth-businesses.

Ontario also provides a "Small Business Investment Tax Credit for Financial Institutions". Started in 1997, this program provides a 75 per cent corporate tax credit for investments of $50,000 or less in small businesses.

New Brunswick: The previous New Brunswick government proposed an Equity Tax Credit that was very similar to the Nova Scotia Equity Tax Credit program. The program provides for a 30 per cent tax credit for investments in New Brunswick small businesses. The legislation enabling this credit has not been given Royal Assent.

APPENDIX B

INVESTMENT TAX CREDIT FOR MANUFACTURING AND PROCESSING (ITCM&P)

Definition of Manufacturing & Processing

The ITCM&P is administered by the Canada Customs and Revenue Agency (CCRA) as part of the normal corporate tax filing process. A separate form is required for the credit, schedule 344. CCRA rules for defining manufacturing and processing firms apply. A firm which has 10 per cent, or more, of its revenues derived from manufacturing and processing qualifies under the federal manufacturing and processing definition used for the credit.

The federal Income Tax Act does not directly define manufacturing and processing but a broad definition is available in CCRA's Interpretation Bulletin IT-145R which essentially includes the creation or shaping or stamping or forming of an object out of something. This definition excludes changes wrought upon "something" by natural growth. The definition also specifically excludes activities such as construction, natural resource extraction, and production of gas.

Although primary resource-type of activity is excluded from this definition, if a farming or fishing operation has a processing element (e.g., cleaning, sorting, grading and spraying of eggs, filleting, shelling, freezing, smoking fish for market) and if the processing-type of activity is clearly delineated or operated as a distinct separate business, CCRA may consider the processing activity eligible for the credit.

Participation

The 1997 and 1998 (to October 15) tax files assessment data indicated that more than half of the companies (53.1 per cent) and over 80 per cent of the capital investment occurred in the manufacturing sector. Within the manufacturing sector, the largest number of clients were in the Food Processing Industries (mostly fish plants), Forestry Product Industries (mostly sawmills) and Metal Products Industries (mostly machine shops). In terms of size of capital investment, the top three industries were the Forestry Product Industries, Transportation Equipment Industries and Food Processing Industries.

Tax credits are up to 30 per cent of total eligible capital investment. The largest individual tax credit exceeds $5 million while the smallest is under $100.

The geographical distribution analysis is limited by the nature of the tax data collected. The tax return reflects only the address of the filing office not where the actual expenditures may have been incurred. For example, a manufacturer with its head offices in Halifax but its manufacturing plants located in Yarmouth and Sydney will only have the Halifax address associated with the tax return. In actual fact the investment that generated the credit could have been in either Sydney or

Yarmouth or both.

In terms of number of companies filing almost all claimants in the data sourced were Nova Scotia resident firms. The exceptions were: one headquartered in Newfoundland; six in New Brunswick; sixteen in Ontario; and seven in Quebec. Taxfilers with addresses in Halifax Regional Municipality (HRM) were 30.6 per cent of claimants, 24.2 per cent had South Shore mailing addresses and 7.3 per cent had Cape Breton addresses.

Considering the value of credits by geographical mailing address indicates that the largest investments were undertaken by firms with head offices outside Nova Scotia generating 32.8 per cent of total eligible expenditures. Firms mailing from HRM incurred 31.5 per cent of eligible expenditures while firms headquartered in Cape Breton incurred 2.6 per cent of investment expenditures.

Number of Companies (Clients) and Total Eligible Capital Investment By Economic Regions[1] : ITCM&P 1997 to October 15, 1998

Economic Region ***(of origin of tax return field)***	**Number of Companies**	**Percentage Share Companies**	**Total Eligible Investment**	**Percentage Share Investment**
Cape Breton	26	7.3%	$5,215,129	2.6%
Northern Mainland NS	75	21.1%	$32,564,108	16.1%
Annapolis Valley	30	8.4%	$7,491,900	3.7%
South Shore Region	86	24.2%	$27,030,731	13.4%
HRM	109	30.6%	$63,776,563	31.5%
Head Office Outside of Nova Scotia	30	8.4%	$66,359,914	32.8%
Total	**356**	**100.0%**	**$202,438,345**	**100.0%**

Source: Revenue Canada Tax Data

Notes:

[1] Economic Regions are defined as follows:
Cape Breton Economic Region - all the counties of Cape Breton Island
Northern Mainland Nova Scotia - the counties of Cumberland, Colchester, Pictou, Antigonish and Guysborough
South Shore Region - the counties of Lunenburg, Shelburne, Queen's Yarmouth and Digby
Annapolis Valley Region - the counties of Hants, Kings and Annapolis
HRM Region - Halifax Regional Municipality

Survey Analysis

A survey was undertaken of a number of companies utilizing the ITCM&P. There were 320 surveys mailed out with a response rate of 32.2 per cent (103 completed forms). The majority of the respondents (78.4 per cent) had operations solely in Nova Scotia: they did not have a branch, subsidiary or related company in a location outside Nova Scotia. For 97.0 per cent of respondents, manufacturing and processing was an important part of their business (very important for 77.5 per cent) and many firms had been involved in manufacturing and processing in Nova Scotia for many years. Eighty per cent of respondents had been involved in manufacturing and processing in Nova Scotia for more than ten years.

The questionnaire asked companies to rank the importance or influence of various factors on the company's overall level of manufacturing and processing capital expenditures. The factors ranked were cash flow, maintenance of a ratio of capital spending to a budgeted value such as sales, creating competitive advantage, government tax support for manufacturing and processing investment and after-tax rate of return on M&P investment. The majority of relevant respondents indicated that the cash flow position of the firm had the greatest influence on the capital spending of the firm. Firms were asked to rank a number of influences on a scale of one to ten with one being not important and ten being very important. Taking the mean of the rankings under each influence gives a strong indication of the strength of the influence. The cash flow position of the firm had a mean ranking of 8.1 out of a possible ten, making it the strongest influence. The next strongest factors were the competitive advantage of the firm and the influence of government tax incentives both with a mean ranking of 7.6.

Three government support programs (federal investment tax credit, federal capital cost allowance rules, and ITCM&P) were ranked in importance in influencing the company's level of manufacturing and processing capital expenditure. In comparing responses using a one (not important) to ten (very important) scale, the provincial credit ranked roughly the same as the federal tax credit with each having a mean ranking of approximately 7.9 out of ten. The capital cost allowance was almost as important with a mean ranking of 7.3 out of ten.

It appears that the ITCM&P does change investment and output levels. Companies were asked if the ITCM&P did not exist what would have been the effect on their manufacturing and processing capital expenditures and manufacturing and processing output. For 57.3 per cent, their capital investment would have been lower, while almost ten per cent would have postponed or foregone investment. Investment levels would have remained unchanged for 26.2 per cent of respondents.

Of those surveyed, 53.4 per cent of the companies indicated their manufacturing and processing output would have been lower if the ITCM&P had not been available. Thirty-five per cent reported that it would have had no impact on their output.

Companies were asked what has been the primary contribution of Nova Scotia-based manufacturing and processing investment to their firm. For many firms the primary benefit was in the area of current products: increased production capacity of current products (40.4 per cent); improved current production processes (24.0 per cent); and replacement of older assets (9.6 per cent). For 14.4 per cent of the firms, the primary contribution was the added production of new products.

Overall, the ITCM&P does appear to significantly influence the level of M&P capital investment and output.

Economic Analysis

Data

The primary data source was the assessment data from CCRA on tax credit claimants. The tax filer data provide assessment data on total eligible tax credit, taxable income, head office mailing addresses and SIC codes covering the period January 1, 1997 through to October 15, 1998.

These tax tapes only provide the very basic data and information was needed from other sources to complete the analysis. Other data sources included Statistics Canada's Private and Public Investment Intention Survey (Catalogue number 61-260-XIB) which provided a distribution of capital expenditures for Nova Scotia by industry into construction and machinery and equipment expenditures; unpublished data from Statistics Canada on estimates of capital stock by industry for Nova Scotia to estimate capital stock by industry; RDP by industry for Nova Scotia from Statistics Canada (Catalogue number: 15-203) to provide output measures; and Statistics Canada's annual average weekly earnings (Employment, Hours and Earnings Survey, Catalogue number 72F002XDB) to estimate annual labour income by industry for Nova Scotia. Replies from the Client Surveys (users of the Manufacturing and Processing Tax Credit) conducted by the Nova Scotia Department of Finance also provided additional information on employment impacts before and after the credit and sourcing and production of the machinery and equipment acquired.

Methodology

Economic impacts are measured for both the capital investment and ongoing annual operations associated with that investment. Economic impact analysis requires considerable specific data to perform an impact simulation. The data available are generalized, because of both the general nature of what was collected and the necessity of tax data secrecy. Methodology and assumptions were developed so that economic impacts could be calculated.

Capital Investment Impacts (one-time only)

The eligible tax credit was used to calculate total eligible capital expenditures (eligible tax credit rate is 30 per cent of total eligible investment). The total combined eligible capital investments for 1997 to October 15, 1998 by industry were used to simulate the economic impacts. The combined eligible capital expenditures were distributed into construction and machinery and equipment expenditures for each industry using the percentage distribution of capital expenditures by industry for 1997 (latest actual year available) from Statistics Canada's Private and Public Investment Intention Survey.

Household income coefficients for non-residential construction industry from the NSIO were applied to total construction expenditures ($32 million) to estimate the direct, spinoff and total household income impacts. Annual average wages and salaries for the non-residential construction industry were used to provide estimates of direct employment while the annual industrial average wages and salaries were used to estimate spinoff employment. The "case specific taxation data method" developed in the November 1999 Economic Policy and Analysis Division, Nova Scotia Department of Finance's report *Methodology to Estimate Impacts on Provincial Government Revenue from Investment Programs and Projects* was used to provide the provincial tax revenue estimates.

Capital expenditures for machinery and equipment were adjusted for import leakages (purchases produced outside of Nova Scotia). The Client Survey was used to divide the capital machinery and equipment purchases into produced in Nova Scotia (30 per cent) and produced elsewhere (70 per cent). The value of the capital purchases produced by Nova Scotia companies were estimated to add $51.1 million to the output of the manufacturing sector. For the machinery and equipment produced elsewhere, it was assumed that Nova Scotia would benefit through the wholesale trade margin which was assumed to be 10 per cent of this share ($11.9 million). Installation costs were assumed to be 15 per cent of the purchase price.

The same methodology was applied to the wholesale margin (Wholesale Trade Industry), the increase in manufacturing output (Manufacturing Industry) and installation (Non-residential Construction Industry) costs as for the non-residential construction expenditures to provide household income, employment and provincial tax revenue estimates. That is, the appropriate household income multipliers were used to calculate direct, spinoff and total household income. The appropriate industrial wage was applied to direct household income to estimate direct employment. Spinoff employment was obtained by applying the average annual Nova Scotia wage to spinoff household income. Case specific taxation data method was used to estimate provincial tax revenue.

Operations Associated with the Capital Investment (Annual Impacts)

The capital investment will generate ongoing production activity and hence impacts associated with it. Information provided through tax data and the survey does not provide information about operating expenditures associated with the investment so the following methodology was

developed so that household income impacts could be estimated.

The following relationships were established:

$$B_i = \frac{Q_i}{K_i}$$

where

Q_i = Value added in industry $_i$ (Real Domestic Product per industry)
K_i = Capital stock in industry $_i$
B_i = Value added-Capital Stock Ratio in industry $_i$

Assume $B_i = \frac{Q_i}{K_i} = \frac{\partial K_i}{\partial Q_i}$

where

∂Q_i = Change in value added in industry $_i$
∂K_i = Change in Capital stock in industry $_i$

Thus for each $1.00 of new investment in industry $_i$ value added increases by B_i

$\partial Q_i = \partial HI_i + \partial P_i$ (Value added per industry)

where

∂Q_i = Change in the value added in industry $_i$
∂H_i = Change in household income in industry $_i$
∂P_i = Change in operating surplus (corporate profits + depreciation) in industry $_i$ (from the NSIO)

$\partial Q_i = \partial I_i \times B_i$

where

∂Q_i = Change in the value added in industry $_i$
∂I_i = Change in capital investment in industry $_i$ (total eligible investment from the Tax Credit)
B_i = Value added-Capital Stock Ratio in industry $_i$

$\partial DH_i = \partial Q_i \times H_i/Q_i$

where

∂Dh_i = Change in direct household income in industry $_i$
∂Q_i = Change in the value added in industry $_i$
H_i/Q_i = Labour coefficient of value added in industry $_i$ (devised from the Nova Scotia Input/Output Model.

$\partial TH_i = \partial DH_i \times M_i$

where

∂Th_i = Change in total household income (direct, indirect and induced)
∂Dh_i = Change in direct household income in industry $_i$
M_i = Multiplier in industry $_i$ = TH_i/DH_i (total household income coefficient divided by the direct household income coefficient from the NSIO

$\partial SPH_i = \partial Th_i - \partial DH_i$ (by definition)

where

∂SPH_i=Change in Spinoff Household incomes in industry $_i$

Once the household income impacts are estimated the appropriate annual average wages and salaries and provincial tax rates by income level for industry i were applied to estimate the employment and provincial tax revenues impacts (as described under capital impacts methodology).

The above methodology on the annual operational impacts assumes no capital-labour substitution after investment (i.e., capital investment does not replace employment). No capital-labour substitution implies that increased output through capital investment will increase employment, and thus, provincial tax revenue. This assumption is not realistic. Improved productivity obtained by substituting capital for labour could be necessary to keep the firm competitive in today's marketplace. In other words, modernization becomes a form of employment maintenance. Increased production without increased employment, limits any positive impact on provincial tax revenues (net of corporate income tax) while decreased employment could decrease tax revenues (net of corporate income tax).

In the client survey undertaken, of the 84 respondents that provided numbers for employment for both 1996 and 1998 (including those that indicated employment was zero in 1996), 25 per cent experienced no change in employment, 69 per cent experienced an increase in employment and 6 per cent experienced a decrease. For the companies that reported increases, employment had increased 656.4 person-years. The employment total for the 84 companies was 3,578.8 person-years. A proxy was developed for capital-labour substitution using employment changes (by firms reporting increases) divided by 1998 employment of the 84 tax clients. This proxy of 14 per cent was applied to total tax revenue of annual operations. This reduced the annual operation total tax revenue to $1.5 million a year.

Assumptions

- Companies are able to claim the full value of the tax credit.
- Tax credit amounts represent 30 per cent of total investment so total investment is calculated using the tax credit.
- Capital expenditures were assumed to be completed by the end of 1998. The impact stimulations were based on the combined total eligible investments for 1997 to October 15

1998 period.

- Capital expenditures were fully incremental in two aspects. The investment would not have occurred without the ITCM&P and the investment resulted in new products or increased production of existing products.
- The distribution of capital expenditures between construction and machinery and equipment expenditures from Statistics Canada's Private and Public Investment Intentions Survey reflected the distribution by ITCM&P clients.
- The share of capital machinery and equipment produced in Nova Scotia noted in the Tax Credit Client Survey reflected the Tax Credit population share.
- It was assumed that the Nova Scotia wholesalers' trade margins were 10 per cent of the imported capital expenditures for machinery and equipment.
- Installation costs for the machinery and equipment were assumed to be 15 per cent of the machinery and equipment purchases.
- The ratio of capital stock by industry to RDP by industry reflected the change to value added from new capital expenditures. (See Operations Associated with the Capital Investment Methodology for a more detailed description)
- Labour coefficients and operating surplus by industry from the NSIO reflected the share of value added output.
- The employment impacts before and after capital investment in the Tax Credit Survey represented the Client population impacts.
- There was no capital-labour substitution. For every dollar increase in output there was a proportional increase in labour income.

Impacts of Capital Investment

The capital investment itself generates impacts through construction, increase in manufacturing output (purchase of machinery and equipment produced in Nova Scotia), wholesale trade (purchase of machinery and equipment produced elsewhere through Nova Scotia representatives) and installation. These impacts are one-time impacts. The following table displays the impacts associated with construction activities.

Economic Impacts of Capital Construction Expenditures
Nova Scotia Manufacturing & Processing Tax Credit
(1997 - October 15, 1998)

Economic Impacts	Direct	Spinoffs	Total
Household Income ($ million)	12.8	7.5	20.3
Employment (person-years)	430	290	720
Provincial Tax Revenue ($ million)	1.4	0.8	2.2

As noted in the above table, the one-time construction expenditures of $32 million generated over $20 million in household income. This level of income supported a total of 720 person-years of employment. Provincial tax revenues associated with this activity were $2.2 million.

The table below reveals the economic impacts resulting from the one-time purchase and installation of machinery and equipment. The economic impacts from the purchase of machinery and equipments from companies located in Nova Scotia were included along with the impacts of importing the goods through a Nova Scotia wholesaler and installation costs. Total expenditures on machinery and equipment was estimated at $170.4 million which was 84 per cent of the total capital investments.

Economic Impacts of Expenditures on Machinery and Equipment
Nova Scotia Manufacturing & Processing Tax Credit
(1997 - October 15, 1998)

Economic Impacts	Direct	Spinoffs	Total
Household Income ($ million)	30.4	19.7	50.1
Employment (person-years)	820	700	1,520
Provincial Tax Revenue ($ million)	3.3	2	5.3

The purchase and installation of capital equipment created $50.1 million in total household income in Nova Scotia, supported a total of 1,520 person-years of employment and provided provincial tax revenues of $5.3 million.

The total impact of capital investment in Nova Scotia is found in the following table:

Economic Impacts of Capital Investment
Nova Scotia Manufacturing & Processing Tax Credit
(1997 - October 15, 1998)

Economic Impacts	Direct	Spinoffs	Total
Household Income ($ million)	43.2	27.2	70.4
Employment (person-years)	1,250	990	2,240
Provincial Tax Revenue ($ million)	4.7	2.8	7.5

These impacts do not necessarily represent additional employment and tax revenue from the previous year. The people employed could have been employed the previous year in a different investment project.

Impacts of Operating Activity Associated with Capital Investment

On the basis of the methodology developed, estimates were made of household income associated with the capital investment. These estimates were then used to calculate employment and provincial government revenues which are found in the following table. These impact assume no capital-labour substitution.

Economic Impacts of Annual Operational Associated with Investments Undertaken Under the Nova Scotia Manufacturing & Processing Tax Credit Program
(No Capital Labour Substitution, Full Incrementality)

Economic Impacts	Direct	Spinoffs	Total
Total Household Income ($ million)	67.9	53	120.9
Total Employment (person-years)	2,000	1,890	3,890
Total Provincial Tax Revenue ($ million)	6.4	4.6	11.0

The increase in industrial output associated with capital investments results in $120.9 million in household income supporting a total of 3,890 person-years of employment. The annual tax revenues are estimated at $11.0 million. However, this needs to be modified by capital-labour substitution. Once the proxy that was developed from the client-survey is applied, the annual provincial tax revenue is reduced to $1.5 million. Total household income and employment will also undergo a substantial reduction.

APPENDIX C

FILM INDUSTRY TAX CREDIT (FITC)

Eligibility Criteria

The Nova Scotia Film Development Corporation (NSFDC) registers eligible films. The criteria for eligible film are:

- The proposed film has to be intended for television, cinema, video tape or non-theatrical production and the subject of the proposal is drama variety, performing arts, animated or informational series, a documentary or music programming. The film will not be eligible if it receives a "explicit sex" or "excessive violence" rating under the Amusement Act.

- the corporation must prepare a marketing plan detailing

    - estimated total production costs;
    - expected revenue from eligible film sales;
    - the estimated value of the film industry credit;
    - a financing plan a recoupment schedule;
    - a script; and
    - other information as requested by the Minister.

The NSFDC also prepares the FITC applications. The Department of Finance approves the application and issues certificates for the tax credit. The NSFDC acts as a "go between" between the producers and the Department of Finance.

Economic Analysis

Methodology

Data on film operations is aggregated and the Nova Scotia Input-Output model (NSIO) is used to perform impact simulations for both credit and non-credit film productions.

Provincial tax revenues from personal income and expenditures are estimated by using results supplied by the NSIO and applying the "case specific taxation data method" as reported in the November 1999 Nova Scotia Department of Finance, Economic Policy and Analysis Division, report entitled ***Methodology to Estimate Impacts on Provincial Government Revenue from Investment Programs and Projects***. Provincial tax impacts are comprised chiefly of taxes on personal incomes and expenditures. The provincial tax revenue estimates do not include provisions for corporate income taxes but do include estimated indirect taxes on business inputs.

Assumptions

- All cost information was in current dollar terms. Average annual salary estimates are based upon the 1999 level of $35,000 (supplied by the NSFDC) deflated to prior years using the GDP Implicit Price Deflator for Nova Scotia to arrive at current dollar term estimates for each of the years under study.
- Wage information was assumed not to include fringe benefits. The NSIO automatically includes fringe benefits in all household calculations. Therefore the wages and salaries were appropriately treated to eliminate fringe benefits from the model results.
- Nova Scotia personal income tax (PIT) is not collected on non-resident labour costs. It is assumed that 50 per cent of the money non-residents earn working in Nova Scotia is spent in the Province and 50 per cent is saved or spent elsewhere. The Nova Scotia spending portion of their wages and salaries does provide spinoff household income to the Nova Scotia economy and spinoff household income does produce PIT and HST revenue to the Province.
- It is assumed that "Nova Scotia labour" for tax credit purposes is "Nova Scotia labour" for tax collection purposes.
- Non-labour production costs are allocated into IO Model sectors as follows:
  - Office equipment rentals and equipment rentals were placed in the Business Accessories/Machinery and Car Leasing/Other Services sector of the NSIO
  - Facilities rentals were placed in the Other Finance and Real Estate Industries sector
  - Props and construction expenditures were placed in the Repair Construction sector
  - Wardrobe expenditures were placed in the Miscellaneous Clothing and Apparel Industries sector
  - Art and make-up expenditures were placed in the Miscellaneous Business Services sector
  - Video tape and film expenditures were placed in the Motion Picture and Video Production sector
  - Transportation expenditures were placed in the Miscellaneous Transportation Industries sector
  - Travel and accommodation expenditures were placed in the Travel and Entertainment Industries sector
  - Publicity expenditures are placed in the Advertising and Promotions sector.
  - General expenditures, comprised of legal, insurance, and security, are placed in the Professional Business Services sector

Economic Impact Results

Economic impact analysis using the NSIO are done for both the credit and non-credit film productions. All estimated economic activity due to film production is a one-time only impact. Once production is over there is no further annual ongoing activity associated with the production. Another production or sequel generates another tax credit. The impact analysis is conducted on all eligible film productions. In some cases the film tax credit has not been issued as

an audited statement has not yet been received. For these cases the estimate of the FTC is based on the estimated Nova Scotia labour. These outstanding tax credits are allocated to the production year of the film. To date, approximately $16 million in credits have been issued. Based on information provided by the FDC, the Department estimates another $19 million in credits have been accrued through 1999.

The economic impact analysis produces estimates for household income (wages and salaries), employment (on a person-year or full-time equivalent basis) and provincial government revenue (personal income taxes and spending taxes). The NSIO model does not provide an estimate for corporate income taxes.

The impacts are also divided into three components: direct; spinoff; and total. Direct impacts are those that result directly from the company's expenditures on or purchases of goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (resulting from inter-industry transactions) and induced impacts (resulting from household spending). Total impacts are the sum of direct and spinoff impacts.

In addition to the assumptions outlined above it is assumed that the investments are incremental.

Incrementality of the Nova Scotia Film Industry and the Provincial Film Tax Credit Program

Important to this evaluation is the subject of incrementality - would the film activity have taken place without the existence of the FTC? If activity would have been undertaken without the tax credit then there is no benefit to the Province of having it in place, in fact, the loss is substantial being equivalent to the costs of the tax credits of $35.6 million over the period 1996/97-1999/00.

To assist in this analysis the experience of other jurisdictions is considered. Information supplied by the Nova Scotia Film and Television Producers Association (January 7, 2000) indicates that Ontario and Alberta had noticeable dropoffs in film activity when they discontinued film assistance. In Ontario's case, the Ontario Film Development Corporation was discontinued in 1995 and the industry, valued at $600 million, began to crumble with the loss being so dramatic that the Ontario government immediately implemented several new film industry tax credits to boost production levels back to where they had been in 1994. Since that time, the Ontario government has relied almost solely on tax credits to stimulate the industry.

When the Alberta government discontinued film and television support programs in 1996, the industry was valued at over $150 million annually. It declined to below $20 million in just one year. Recognizing the cost to the Province, government reintroduced multi-million dollar programming in 1998 to support film and TV production, but it did not introduce tax credit programs and the industry has hardly rebounded.

Results of British Columbia's film industry were just released (Globe & Mail February 8, 2000). In 1999, revenues from the industry topped the $1 billion mark for the first time in history, easily surpassing the previous provincial record for the industry of $808 million in 1998. The British

Columbia government says that the Province ranks first in Canada and third in North America behind Los Angeles and New York. British Columbia has benefited mainly from the cheap Canadian dollar relative to the American dollar and from four different tax incentives.

Other Film Industry Subsidies and Government Assistance Programs

Although not part of this review, government assistance for this industry is not limited to tax credits. There are other provincial government assistance and subsidy programs that directly affect the Nova Scotia film industry. These include the development loan programs of the NSFDC, direct assistance through the Department of Economic Development for sound stage infrastructure development and technicians' training. These programs do provide support for the industry and its infrastructure and add to the industry's position in the national and international market place.

Five sound stages, two community owned and operated and three private, received $2.2 million in provincial support channeled through the Economic Diversification Agreement. The Province also provided repayable loans to the private ventures.

The data presented in the report on financial cost-benefit analysis assumed that all film-generated benefits are linked to the FTC. It is likely other assistance programs also influenced investment decisions. In this respect, a more comprehensive analysis may be needed to measure all the costs of all provincial film assistance against all the benefits.

Other Provinces

Rates of tax credit vary among provinces. Prince Edward Island is currently developing legislation and Alberta has a grant system, otherwise each province provides a fully refundable tax credit. Rates vary and sometimes there are additional programs. Two provinces (Newfoundland and New Brunswick) have a limit on total tax credit to $1 million per eligible project and $2 million per eligible corporation and associated corporations. Most provinces have a limit on total eligible salaries based on a certain percentage of production costs.

APPENDIX D

RESEARCH AND DEVELOPMENT (R&D) TAX CREDIT

Eligibility Criteria

All incorporated Nova Scotia firms that incur qualified expenditures (both capital and current) as defined by the federal Scientific and Experimental (SRED) Credit will be eligible for a refund of the tax credit (15 per cent of eligible expenditures). The tax credit is first applied against the corporate income taxes otherwise payable for that year and if there is any credit in excess of that amount, the credit is refunded to the corporation.

SRED credit applies to basic research, applied research, and experimental development (includes products and processes). It includes engineering, design, operations research, mathematical analysis, computer programming, data collection, testing, and psychological research. This work may be undertaken by the firm itself or the firm can contract research. Land and ordinary buildings are not eligible.

The R&D tax credit is administered by the Canada Customs and Revenue Agency (CCRA). Along with the corporate tax forms, corporations must file form T661which determines eligibility and Schedule 340 which is for the Nova Scotia credit. Unlike the federal tax credit, the Nova Scotia R&D tax credit allows the firm to claim credits on contract work undertaken on behalf of and paid for by governments or their agencies.

Survey Analysis

Federal Survey

In 1995 Federal Finance and Revenue Canada conducted an extensive survey of claimants of the federal SRED credit. The federal survey[1] analysis reported upon in June of 1996 offers very informative and relevant results for the Nova Scotia evaluation. The federal survey had the luxury of a substantial time frame and time series analysis, a telephone survey, a larger sample base as well as very good access to filer data. Many of the conclusions are quite relevant to the provincial evaluation.

Factors Influencing R&D Expenditures
The federal survey indicated that the primary factor determining the R&D expenditure level was the desire to create a competitive advantage. The second greatest influence was the cash flow position of the firm with government support following third. The 1996 Report indicates that the

[1] Survey of Scientific Research Experimental Development Claimants. Department of Finance and Revenue Canada June 1996.

government support would tie in with the prominence of the cash flow influence since the government support would contribute to the cash flow of the firm.

Importance of Government Support

Among the various forms of government assistance available to encourage R&D activity the survey found that the federal SRED credit was the most important form of assistance. This is reasonable given that most provincial credits' eligibility is determined by the federal credit and for some types of firms there is a substantial refundable component and preferred rate under the SRED. This relates well to the survey's ranking of refundability as the second most important government assistance factor. Provincial tax incentives ranked well down at fifth most important factor.

Incrementality

The 1996 Report found that the federal SRED had a substantial impact on R&D activity. Without the SRED, firms would have reduced the scale of expenditures, canceled, postponed or increased the time frame of projects. Fifty-seven per cent of firms would have reduced R&D spending without the federal credit while 38 per cent would not have changed the level of such spending. The federal study estimated that SRED expenditures were 32 per cent higher as a result of the federal credit. The study found that firms that saw cash flow as significant determinant of R&D spending had higher incrementality due to the credit while firms that had R&D as a more significant component of their business strategy had lower estimated incrementality responses. In other words those that rely on cash flow streams or after-tax returns to determine the level of R&D undertaken will be far more influenced by the federal credit. Those that see R&D as a vital component of their growth and survival will be less influenced in the size of their spending by the existence of the federal credit.

Innovation

The federal survey found that 75 per cent of SRED spending was on product innovation and the balance on process innovation. One third of respondents indicated that their innovation activities were on product or process improvements while 61 per cent were focused on innovation of new products or processes.

Implications for the provincial credit

We can safely extrapolate from the federal survey several results that are relevant for the provincial credit. That the primary influence on R&D spending is the cash flow position of the firm means that the provincial credit would be especially important since it is refundable, which offers a significant cash infusion to firms, in or close to the year of spending, especially those that are not taxable. Taxable firms would not have to wait the duration of carryforward period to receive outstanding government assistance. That the federal credit is a more important factor than provincial credits in influencing R&D spending may relate to the fact that the federal credit must be encountered before most provincial credits may be claimed because the latter dependent on the federal claim submission and vetting process. Again the high influence of the refundability factor in the government assistance influence probably indicates that the provincial credit has a significant influence since it is refundable. It is safe to assume that given the importance of the

refundability factor that the provincial refundability influences the location of the R&D spending where firms have the ability to perform it in other jurisdictions.

It is highly likely that Nova Scotia R&D spenders are also primarily involved in product innovation and that they are also primarily focussed on developing new products. The federal results on incrementality are also probably highly relevant to the provincial credit since our refundable credit parallels the federal refundability to some degree. The refundable nature of the provincial credit would be a strong influence on those dependent on cash flow as a primary determinant of R&D spending which the federal survey indicates is the majority of claimants.

Nova Scotia Survey

Using the 1997 data set of Nova Scotia R&D credit claimants, a survey was conducted of firms for which the Department could locate current mailing addresses. Thirty-seven of 104 surveys were returned resulting in a response rate of 36 per cent. Care must be taken in the amount of weight attached to the analysis below as the results account for less than one-quarter of the firms that used the credit in the 1997 data set.

Factors Influencing R&D Expenditures
Seventy-eight per cent of respondents indicated that R&D is very important to their company's overall business strategy. This response indicates that the credit is not fully incremental since if the activity is highly important to the firm's strategy it is likely to be undertaken regardless of the credit's existence or value. However, 42 per cent of firms had locations outside Nova Scotia indicating that almost half may have the ability to shift the activity elsewhere which argues in favor of the credit being incremental for possibly half of respondents.

Claimants were asked to rank the importance of various influences on the level of R&D expenditures: cash flow; maintenance of a ratio of research and development to a budgeted value such as sales; creation of a competitive advantage; government tax support; and after-tax rate of return on research and development investment (Survey Question 3.1) Respondents indicated that government assistance was the most important factor giving it a mean ranking of 8.2 out of 10. This is somewhat in conflict with the response that strategy is a major factor in pursuing R&D. The selection of R&D as a strategic issue corresponds with the second highest ranking given to "creating competitive advantage" as an influence (7.9 out of 10). The next highest ranked influence was "cash flow position of the firm". This corresponds fairly well with the results of the federal survey which accorded the highest ranking to the desire to create competitive advantage while cash flow was the second most important factor. The high ranking given the cash flow factor in both surveys would indicate that the credit is highly incremental since a refundable credit significantly contributes to the cash flow position of the firm.

Incrementality and the Importance of Government Support
Firms were asked to rank the influence of various forms of government assistance on R&D

expenditures: the federal SRED tax credit; government contracts for research and development; federal accelerated deductibility of research and development capital pools; and provincial research and development tax credits (Survey Question 3.2). The federal and provincial credits were ranked equally important. This is reasonable since the federal credit has a refundable component for some firms while the provincial credit is refundable for all claimants. In addition, the provincial credit is essentially driven off the rigorous federal credit. This result differs somewhat from the federal survey which found high ranking given to the federal credit and relatively low ranking given to province assistance. However, this is reasonable since respondents to the federal survey probably knew they were responding to a federal survey and would not have had a specific provincial credit in mind and respondents to the provincial survey knew they were responding to the provincial government regarding a specific provincial credit. Respondents tend to target their answers to the expected audience and to what is most in their interest.

The provincial credit clearly had an effect on investment levels. Ninety-four percent of respondents indicated that their R&D expenditures would have been lower without the provincial credit (Survey Question 3.3). Refundability was a significant factor as almost 80 per cent of R&D expenditures would have been either lower, postponed or relocated outside the province. This confirms the incrementality of the provincial credit.

Impact of the Provincial Credit

Sixty-three per cent of respondents had a very important contribution to sales from the Nova Scotia-based R&D activity (Survey Question 4.1). Over 80 per cent had at least a moderate contribution to sales. This indicates that the provincial credit is at least increasing the economic activity of the firm and in a way which adds to its growth and viability. The largest contribution of the provincial R&D program (43 per cent) was in developing new products (Survey Question #4.2). The next most important impact was toward improved processes (21 per cent). No respondent found that the program had no identifiable contribution.

Implications for the provincial credit

The survey of Nova Scotia R&D filers essentially confirms that the provincial credit is incremental. At least half the respondents have the ability to relocate the activity elsewhere. The credit's main influence is in contributing to the cash flow position of the firm. The credit appears to have a significant impact on sales and primarily contributes to the development of new products.

Conclusion

Based on the tax tape analysis, the federal survey and Nova Scotia survey results, discussions with Canada Customs and Revenue Agency, SRED experts, discussions with professional tax practitioners, and selected tax literature, it is concluded that the Nova Scotia R&D credit is substantially incremental; i.e., without the credit the amount of R&D undertaken by firms in Nova Scotia would not be undertaken or at least substantially reduced or postponed. R&D is an economically valuable activity of a "seed" investment nature important to the continued growth and viability of firms in Nova Scotia.

Economic Analysis

Economic impact analysis using the NSIO can only be done on the eligible research and development investment expenditures, as information is not available on the ongoing operations associated with this investment. The ongoing operations associated with this investment would be expected to produce returns to the firms and to the provincial treasury on an annual basis unlike the investment expenditures which are a one-time only impact.

The research and development expenditures of $47.2 million are divided into capital expenditures of $2.8 million and current expenditures of $44.4 million. The following table illustrates the one-time impacts of the capital expenditures that were eligible for a R&D credit in the 1997 tax year.

Economic Impacts of 1997 Research & Development Capital Expenditures

	Direct	**Spinoff**	**Total**
Household Income ($millions)	0.4	0.2	0.6
Employment (person-years)	11	7	18
Provincial Gov't Revenue ($millions)			
Income Taxes	0.02	0.01	0.03
Spending Taxes	0.01	0.01	0.02
Total	**0.04**	**0.02**	**0.05**

Note: Totals may not add due to rounding.

The R&D capital investment supported 11 person-years of direct employment and 18 person-years in total. The provincial government revenue associated with this amount is $35,000 directly and $52,000 in total. These are one-time only occurrences. The employment and tax revenue may not be totally incremental or "new" to the Nova Scotia economy. A previous capital investment project may have supported those people in a previous year.

The following table illustrates the economic impacts of the current expenditures of $44.4 million. The vast majority ($34.6 million) are assumed to be wages and salaries with a much smaller amount assumed to be expenditures on materials ($9.8 million).

Economic Impacts of 1997 Research and Development Current Expenditures

	Direct	Spinoff	Total
Household Income ($millions)	34.6	13.1	47.7
Employment (person-years)	1030	450	1480
Provincial Government Revenue ($millions)			
Income Taxes	2.1	0.6	2.7
Spending Taxes	1.2	0.4	1.7
Total	**3.3**	**1.1**	**4.4**

Note: Totals may not add due to rounding.

Current expenditures on research and development support 1,030 person-years of direct employment and 1,480 person-years of total employment. The total associated household income is $47.7 million. The associated total (direct and spinoff) provincial government revenue is $4.4 million.

In total, research and development expenditures eligible for the R&D credit supported direct employment of 1,040 and total employment of 1,500. Associated household income amounted to nearly $35 million and $48.3 million, respectively. The total (direct and spinoff) return to the provincial treasury based on these expenditures was $4.5 million. The estimated total refundable tax credit was $7.1 million. This suggests a net loss of $2.6 million to the provincial treasury. It must be remembered however, that the analysis is incomplete as it has not been able to measure the economic impacts of ongoing activities associated with the original investment. Investment in research and development is of a seed investment (investment in the beginning of a company or new product or process which is expected to add to the company's revenue base in future years) with the payback of the initial investment expected after some years.

Methodology

Given the data availability, the combined Nova Scotia-based expenditures (capital and current) were determined based on available information on the Nova Scotia refundable tax credits and the applicable tax credit rate (15 per cent). The Nova Scotia-based expenditures were then split into capital and current expenditures based on the pre-determined Nova Scotia-based expenditures and available information on total allowable expenditures (capital and current) from the federal T661 form. The current expenditures were further broken down into the components of wages and salaries, materials, contract payments, third-party payments and other payments. Given the current expenditures sourced from the federal database of Nova Scotia claimants, the corresponding portions for Nova Scotia were then determined based on the pre-determined Nova Scotia-based current expenditures.

In the absence of detailed information regarding contract payments, other payments and third-party payments, these were allocated to salaries and materials using the respective ratios of salaries and materials out of the total current expenditures. This resulted in current expenditures being classified into two main categories: wages and salaries, and materials.

Given the estimated research and development employment in the federal database of Nova Scotia claimants, Nova Scotia employment level was determined based on the ratio of wages and salaries in Nova Scotia to the wages and salaries in the federal database of Nova Scotia claimants. This is based on the assumption that the Nova Scotia employment levels are proportional to the salaries at the national level where firms are multi-jurisdictional.

Based on a review of the data supplied, the North America Industrial Classification System (NAICS) and the 1980 Standard Industrial Classification (SIC), research and development activities are classified under Professional Business Services. Using the 1990 Nova Scotia Input-Output system, the income multiplier for Professional Business Services was applied to the direct household income comprised of wages and salaries for the current expenditures to arrive at the current expenditures' impact.

The income multiplier for Wholesale Trade industry was applied to the direct household income component of the wholesale margin (derived from capital expenditures) to arrive at the capital expenditures impact. Direct household income from the wholesale trade industry's handling imports of capital items was derived by applying the direct requirement coefficient for wholesale margin to the total estimated margin; the total margin was arrived at by applying the gross margin rate of 28.2 per cent sourced from the 1989 Key Business Ratios published by Dun & Bradstreet Canada.

The spinoff household income was derived as a residual of the total household income impacts and the direct household income. The spinoff employment was derived using the annual average Nova Scotia wage and salary calculated using the average weekly industry earnings for 1997 sourced from Statistics Canada, Annual Estimates of Employment, Payrolls and Weekly Earnings Publication, 1986-1998 (Catalogue no. 72F0002XDB).

Separate impact analyses were conducted for the capital and current expenditures and the results were reported in separately and then totalled.

The impact on provincial government revenue, comprised of personal income and spending taxes, is estimated from supplied data on the characteristics of the workforce and on wages and salaries (and assumed inclusion of benefits paid by companies) and applying the proforma personal income and consumption tax rates developed by the Department of Finance, "Methodology to Estimate Impacts on Provincial Government Revenue From Investment Programs and Projects (November 1999).

Assumptions

In deriving the economic impacts, assumptions were made to determine what proportion of the estimated capital and current expenditures would be on goods and services produced and purchased in Nova Scotia as well as goods and services purchased but not produced in Nova Scotia. These assumptions, as listed below, are necessary in deriving the economic impacts on the Nova Scotia economy:

- By using the overall research and development expenditures in the federal database of Nova Scotia claimants (data on Nova Scotia-based firms both single and multi-jurisdictional) to compute the provincial expenditures, it was assumed that research and development expenditures are in the same proportion for all firms (i.e., production functions are identical).
- Capital costs are assumed to be machinery and equipment (assumed to be imported through Nova Scotia distributors). Wholesale trade margins were derived through use of an appropriate margin.
- All values were in 1997 dollars.
- Wages and salaries were assumed to include supplementary labour income (fringe benefits).
- Contract payments, other payments and third-party payments incurred during research and development activities were assumed to be proportional to the share of salaries and materials out of the total current expenditures.
- It is assumed that the research and development expenditures were incremental to the Nova Scotia economy; that is, research and development expenditures were stimulated as a result of the incentives provided by the provincial government and would not have occurred in the absence of these incentives. This incrementality assumption is critical in deriving the economic impacts on the provincial economy.

Qualitative Considerations

Research and development activities have implications for economic development, both at the micro level for the firm and at the macro level for the economy. At the firm level in Nova Scotia, analysis based on the 1997 expenditures of tax credit filer data, indicates that new product development and product improvement account for the majority (58 per cent) of expenditures. Firms are concentrating their efforts on producing their own products rather than trying to imitate existing products. These firms may be more oriented toward increasing their market niche as well as advancing their competitive advantage. If this is successful, firms will be in a position to create new markets or consolidate existing ones and will experience economic growth.

Economic theory and empirical evidence indicates that research and development influences technology. Technology through its impact on factors of production improves productivity and thus, is a key determinant of long-term growth.

Research and development activity creates a demand for skilled labour, resulting in employment opportunities for skilled science and technology workers in the Province. Creating a demand for the supply of educated individuals graduating from Nova Scotia's universities and colleges, enables the Province to receive some of the benefits of providing educational infrastructure rather than have these individuals seek employment opportunities outside the Province. A critical mass of science and technological workers make the Province attractive to certain types of businesses. As well, these workers tend to have higher than average wages which add to economic growth.

There are two problems with research and development that may lead to suboptimal decisions: probability of success and externalities. It is impossible to know if and when a particular research and development activity will be successful. It makes it very difficult to judge the appropriate level of investment and the proper time frame that should be devoted to pursuing a particular research and development activity. As Atlantic Progress (September/October 1999, Vol 6 No.8, p.73) indicates "The down side about innovation is innovation costs and some promising new ideas just don't work out. The Economist magazine estimates that it takes 3,000 new projects in the lab to lead to one breakthrough that has a strong economic impact."

Externalities, sometimes known as spillovers, mean that there are some costs and benefits that are borne or received by others than the firm. When a firm does not receive all of the benefits of their investment they may not be investing in research and development to the level that is optimal to society. The incentive for a firm to invest in a project depends on the extent it can appropriate (receive) the potential revenues. If some portion of the revenue is appropriable, the firm will invest if that portion is sufficient to make the investment profitable. The quantity that is not produced depends on the degree of inappropriability. Other things equal, perfect inappropriability leads to the absence of production by the private decision makers and perfect appropriability leads to efficient production.

Technology, and knowledge in general, are not fully appropriable in a market economy; once produced, at least part of it can be obtained at no cost. The price that buyers actually pay to acquire a technology is lower than the price that they would be willing to pay had the technology been fully appropriable by its developer. The difference between the two prices is called the spillover benefit or spillover. Therefore technology resulting from research and development is not a pure private good. There is an inappropriability between its production, which may be based on private decision making, and its dissemination, an activity whose benefits extend beyond the producer to the Province and/or society as a whole.

Research and development produces some general benefits to society. Research and development is believed to reduce variable costs, enhance productivity, competitiveness and contribute to output expansion and to output price reduction. This benefits the consumer. Some products and processes developed may also lead to an increase in the quality of life.

A review of economic theory and empirical evidence shows that the social rate of return of research and development activities can be significantly higher than the private rates of return. This confirms the inappropriability of technology through research and development and the

overall importance of research and development to society. What develops is a case of market failure, an inefficient or suboptimal allocation of resources.

A review of the literature suggests that the government has a role in correcting for market failure to which research and development is vulnerable. From an economic point of view, the policy prescription to this kind of market failure is government intervention. Governments of many provinces and countries provide support for research and development, usually through some combination of regulatory and fiscal measures.

In terms of the cost-effectiveness of the policy instruments for research and development, Gordon Lenjoesk and Mario Mansour (Canadian Tax Journal, 1999, Vol. 47, No.2) observed that "the efficacy of policy instruments indicates that tax incentives and concessionary financing may be more effective than direct subsidies although the empirical evidence is limited". Tax incentives and direct subsidies posses different characteristics and may be used to achieve alternative but complementary objectives. The differences are as follows:

- Control over decision-making. Direct subsidies involve discretionary government control over decision-making as funds are selectively channelled to sectors, firms, or investments identified as having the greatest potential for growth or most pressing need for assistance. With tax incentives which are generally available (not targeted), markets determine which investments will be undertaken, decision-making rests with investors.
- Clientele. Tax incentives are typically structured to deliver assistance to a broad range of sectors, firms, or investments. Direct subsidies are usually targeted to relatively small numbers of sectors, firms or investments.
- Encouragement of longer-term investments. The tax system can be more effective in encouraging longer-term investments - firms can reasonably expect ongoing benefits when multi-year projects are undertaken. Funding levels for direct subsidies are often established on an annual basis and may vary (sometimes significantly) from year to year.
- Administration and compliance. By making use of the existing tax administration structure, tax incentives can be less costly (in terms of both administration and compliance), easier to access, more timely, less uncertain and less burdensome than direct subsidies.

Tax Credits in Other Provinces

The Nova Scotia credit is comparable to several other provinces' credits. New Brunswick, Manitoba and Saskatchewan have non-refundable credits at the following respective rates: 10 per cent; 15 per cent; and 15 per cent. British Columbia has a 10 per cent credit with a refundable and non-refundable component. Newfoundland has a fully refundable 15 per cent credit. Ontario and Quebec have far greater diversity in their research and development credits with refundable rates hitting the 30 per cent and 40 per cent mark. They also offer exaggerated deductions ("superallowances") against taxable income. This option is not available to those provinces that

do not administer their own corporate income tax system. The only provinces without a research and development credit are Alberta and Prince Edward Island.

Provincial Research and Development Credits

	NF	NS	NB	PQ	ON	MB	SK	BC
Rate (%)	15	15	10	up to 40	up to 40	15	15	10
Refundable	Yes	Yes	No	Yes	Yes	No	No	Yes

APPENDIX E

ISO 9000/ISO 14000 TAX CREDITS

Survey Results

In terms of impacts, the majority of firms reported no change in the number of employees as a result of certification (63 per cent) but 36 per cent did report an increase. Fifty per cent of the firms reported an increase in revenues while 47 per cent reported no increase. Firms were queried as to changes in sales revenues in specific markets. The majority of firms (71 per cent) reported no change in sales revenue in other Canadian markets in the periods following certification; however, 27 per cent did report an increase. The majority of respondents (67 per cent) reported no change in sales revenue to foreign markets but 32 per cent reported an increase.
Profits showed a similar pattern to revenues, increasing for 50 per cent of the firms and remaining unchanged for 45 per cent. In terms of productivity the benefits were a little more pronounced: 67 per cent of firms reported an increase in productivity while 32 per cent reported no change. Perhaps the clearest benefit is that the majority of respondents (70 per cent) reported that ISO enabled them to win contracts that they would not have been able to without ISO certification.

When questioned about the tax credit itself, 50 per cent of respondents who had received the credit indicated that the tax credit was of no consideration in obtaining the certification. For those that indicated it had importance, 20.5 per cent indicated it was very important and 29.5 per cent indicated it was somewhat important.

It must be noted that the Department of Finance estimates that approximately 130 firms currently certified were eligible for the credit but only 84 of these firms had received a credit. Of surveyed firms that were eligible but did not apply, 18 per cent indicated that it was because they had no corporate tax payable. The majority (54 per cent) indicated it was because they were not aware of the credit. Obviously these certifications are not incremental with respect to the tax credit.

Firms were asked whether the tax credit impacted their decision to seek professional assistance with certification or complete the project "in house". Only 18 per cent of firms completed the project "in house". Of the remainder, 44 per cent indicated the tax credit influenced their decision to seek professional help while 38 per cent indicated it was not a consideration.

The certification may have confirmed operating practices already in place as the majority of firms (62 per cent) felt the tax credit did not lead to a more effective project implementation, however, this result is slightly at odds with 67 per cent of the firms reporting an increase in productivity.

As can be seen from these results, very few firms reported a decrease in employment, revenue, profits, or productivity. ISO certification has had a particularly positive impact on productivity and has allowed firms to win contracts that would not have otherwise been possible. It also seems to have had a positive impact on foreign exports (32 per cent of firms reporting an increase in

sales revenue). Perhaps the most important benefit of ISO certification has been the retention of jobs and economic activity in the Province. Very few firms reported they were worse off after ISO certification.

APPENDIX F

HARMONIZED SALES TAX (HST)

Prior to 1991, the federal government had the Federal Sales Tax on Manufacturers (FST), a tax paid by the manufacturers of certain goods. The rate varied according to the type of good. This tax was "buried" in the price of the good so the final consumer would not know if or how much tax was paid.

This was replaced in 1991 by the Goods and Services Tax (GST), which is a value-added tax. In practise, each producer of a good or service pays the GST on the value of the good or service at that stage of production. The producer receives an input tax credit (ITC) for the value of the taxes paid on goods and services used in production, therefore tax is only paid on the value added. The tax is collected by the vendor at the point of sale and remitted to the Canada Customs and Revenue Agency (CCRA), net of the vendor's ITC (GST paid on purchases). In effect, since producers and vendors receive ITCs, the final consumer bears the tax on the purchased good or service.

Prior to April 1,1997, the Province of Nova Scotia's sales tax (excluding excise taxes) was the Health Services Tax (PST). The PST was paid by the final consumer based on a percentage of the purchase price, including the GST, of certain goods and a smaller number of services. It was collected by the vendor and remitted to the Provincial Tax Commission. The PST tax rate was 11 per cent but when this was applied to the prices including GST (7 per cent rate), the consumer faced an effective tax rate of 18.77 per cent on the price of most goods and certain services. A decision was made to harmonize the two systems and on April 1, 1997, the PST and the GST were replaced by the HST. The HST rate was set at 15 per cent. The provincial portion of the HST is 8 per cent.

Modifications to HST

A value-added sales tax could apply to all goods and services, however, for policy reasons there are exceptions. There are some goods and services which are "zero-rated", that is their tax rate is set at zero. ITCs are available to the producers of zero-rated goods and services. Some examples of zero-rated goods include basic groceries, medical devices, prescription drugs and foreign exports. There are also goods and services which are tax exempt. No HST is applied to the good or service and no ITC is offered to the producer of that good or service. Some examples of exempt goods and services are residential rent, used residential property, health care services, educational services, child care, and financial services. As well, a producer with less than $30,000 in sales has the option to collect the HST, if the HST is not collected there can be no ITCs given for taxes paid. To encourage the export of goods and services, foreign exports are zero-rated and imports are taxable. In a similar vein, tax rebates are available for international visitors who purchase non-excisable goods (other than alcohol, fuel and tobacco products) and hotel/motel (or other temporary accommodations) while they are visiting Canada.

APPENDIX G

EQUITY TAX CREDIT SURVEY INSTRUMENT

Section A - Company Information

The next few questions request background information about your organization.

A1
In what year did your corporation commence operations?

A2
In which industry sector is your corporation primarily involved?

Manufacturing
Retail
Wholesale
Service
Other (please specify)

A3
Approximately how many employees did your company employ in Nova Scotia in 1999 (in Full Time Equivalents)? Full Time Equivalent is 2000 hours of work annually.

_____ Number of Full Time Equivalents
_____ Don't Know/ Not Applicable

A4
Please indicate the approximate percentage of sales revenue your corporation derives from sales to the following markets:

___ Nova Scotia
___ Other parts of Canada
___ Foreign Countries

100%

Section B - ETC Application

The following questions will gather information on investments made in your corporation under the Equity Tax Credit Program.

B1
Approximately how much equity has your corporation raised through the sale of shares under the Equity Tax Credit Program?

B2
What percentage of the equity raised was used in each of the following activities:

_____ Purchase of capital equipment
_____ Working Capital
_____ Repayment of debt
_____ Construction/expansion of facilities
_____ Other (please specify)

100%

Section C - Impact of ETC Certification

The following questions attempt to determine the impact of ETC certification on your corporation.

C1
Has your company experienced an increase or decrease in the following financial measures in the periods following your participation in the Equity Tax Credit Program?

(1 -large increase, 2 -moderate increase, 3 -no change, 4 -moderate decrease, 5 -large decrease)

Number of Employees	1	2	3	4	5
Sales Revenues	1	2	3	4	5
Profits	1	2	3	4	5
Productivity	1	2	3	4	5

C2
Has your company experienced an increase or decrease in **sales revenue** to the following markets in the periods following your participation in the Equity Tax Credit Program?

(1 -large increase, 2 -moderate increase, 3 -no change, 4 -moderate decrease, 5 -large decrease)

Nova Scotia	1	2	3	4	5
Other Canada 1	2	3	4	5	
Foreign Countries	1	2	3	4	5

For the next set of questions, please indicate how strongly you agree/disagree with the following statements.

C3
ETC certification enabled our corporation to obtain equity financing that would not otherwise have been available.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

C4
ETC certification encouraged our corporation to seek equity financing as opposed to debt financing.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

C5
Our corporation could not have started-up or expanded without the benefits of ETC certification.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

C6
Our corporation would have started-up or expanded without the benefits of ETC certification, but the timing of the project would have been delayed.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

C7
The Equity Tax Credit program encouraged our corporation to start-up/expand in Nova Scotia as opposed to another province.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

C8
All things considered, participation in the ETC program has had a **positive** affect on our corporation.

Strongly agree
Agree
No Opinion/Not applicable
Disagree
Strongly Disagree

General Comments

Please provide us with your comments on the Equity Tax Credit Program. You may also register your comments at the Nova Scotia Department of Finance Tax Review web site:
www.gov.ns.ca/finance/fedprov/credit/index.htm

Thank-you for your participation!

APPENDIX H

INVESTMENT TAX CREDIT FOR MANUFACTURING AND PROCESSING SURVEY INSTRUMENT

Section One

The next few questions request background information about this firm.

1. Does your company have a branch, subsidiary or related company in a location outside Nova Scotia?

Yes	_____
No	_____
Don't Know/ Not Applicable	_____

2. What is the importance of manufacturing or processing (M&P) in your company's overall business activity?

Of minor importance	_____
Important	_____
Very Important	_____
Don't Know/ Not Applicable	_____

3. What percentage of your Nova Scotia-based sales is typically derived from your M&P activities in Nova Scotia? For example, you may have sales from provision of services, wholesaling of products and from manufacturing of goods.

Percentage of Nova Scotia sales due to M&P in Nova Scotia	_____
Don't Know/ Not Applicable	_____

4A. Approximately how many employees did your company employ in Nova Scotia in 1996 and 1998 (in Full Time Equivalents if possible)? Full Time Equivalent is 2000 hours of work annually (or 50 weeks at 40 hours per week).

	1996	1998
Number of Full Time Equivalents	_____	_____
Don't Know/ Not Applicable	_____	_____

4B. What is the estimated total employee wage and salary cost, including benefits, of your Nova Scotia-based activity in 1996 and 1998?

	1996	1998
Total wage and salary cost in Nova Scotia	$_____	$_____
Don't Know/ Not Applicable	_____	_____

5. Approximately how many employees did your company employ in Nova Scotia in your M&P activities in 1996 and 1998 (in Full Time Equivalents if possible)? Full Time Equivalent is 2000 hours of work annually (or 50 weeks at 40 hours per week).

	1996	1998
Number of Full Time M&P Equivalents	_____	_____
Don't Know/ Not Applicable	_____	_____

6. How many years has your Nova Scotia-based location been involved in M&P activity?

Years involved in M&P in Nova Scotia	_____
Don't Know/ Not Applicable	_____

Section Two

The Province of Nova Scotia has had a non-refundable M&P tax credit since 1997 which is based on expenditures on plant and equipment for activities meeting the federal Income Tax Act definitions of M&P. The following questions relate to the 1997 or 1998 tax year expenditures that would be eligible for the Nova Scotia M&P tax credit.

1. If your total eligible M&P expenditures in either 1997 or 1998 represents 100%, what proportion of the total fell into each of equipment and buildings?

Machinery & Equipment	_____
Buildings	_____
Total	100%
Don't Know/ Not Applicable	_____

2. To the best of your knowledge what proportion of any capital equipment expenditures considered in the previous question would you estimate would relate to machinery & equipment that was manufactured in Nova Scotia, i.e., not just imported through Nova Scotia distributors?

Estimated proportion of capital expenditures related to equipment produced in Nova Scotia	_____
Don't Know/ Not Applicable	_____

3. What proportion of your M&P expenditures were directed toward output in the following product areas:

Information technology or Communications	_____
Biotechnology and Pharmaceuticals	_____
Environmental products and services	_____
Energy	_____
Resource products (other than Energy)	_____
Food science or preparation	_____

Transportation		_____
Construction		_____
Other (specify)	_____	_____
Total		100%
Don't Know/ Not Applicable		_____

Section Three

The following questions rank the importance or influence of various factors on your company's overall level of M&P capital expenditures.

1. Using a scale of 1 to 10, where "1" means "Not at all important" and "10" means "Extremely important" please rank the following influences on the level of your M&P capital expenditures:

	Not important	Very Important 1 to 10
Cash flow position of the firm	_____	
Maintenance of a ratio of capital spending to a budgeted value such as sales		_____
Creating competitive advantage over competitors		_____
Government tax support for M&P investment		_____
After-tax rate of return on M&P investment		_____
Don't Know/ Not Applicable		_____

2. Using a scale of 1 to 10, where "1" means "Not at all important" and "10" means "Extremely important" please rank the importance of the following government supports in influencing the level of your M&P capital expenditures:

	Not important	Very Important 1 to 10
Federal Investment Tax Credit		_____
Federal Capital Cost Allowance rules		_____
Provincial M&P tax credit		_____
Don't Know/ Not Applicable		_____

3. If there had been no Nova Scotia M&P tax credit would your expenditures in areas other than M&P have been (select one):

Higher	_____
Significantly higher	_____
Lower	_____
Significantly lower	_____
About the same	_____
Don't Know/ Not Applicable	_____

4. If there had been no Nova Scotia M&P tax credit available would your Nova Scotia-

related M&P capital expenditures have been (select one):

The same	_____
Lower	_____
Postponed	_____
Foregone	_____
Moved outside the province	_____
Don't Know/ Not Applicable	_____

5. If there had been no Nova Scotia M&P tax credit available would your Nova Scotia-based M&P output have been (select one):

Lower	_____
Higher	_____
Stayed the same	_____
Don't Know/ Not Applicable	_____

Section Four

The following questions relate your M&P investment activity to your firms output.

1. In terms of the lesser timeframe of either the life of your firm or the last three years, what contribution has your Nova Scotia-based M&P activity made to the sales from your Nova Scotia location (select one):

Minor contribution	_____
Moderate contribution	_____
Very important contribution	_____
Don't Know/ Not Applicable	_____

2. In terms of the lesser timeframe of either the life of your firm or the last three years, what has been the primary contribution of your Nova Scotia-based M&P investment activity to your firm (select one):

Increased production capacity of current products	_____
Added production of new products	_____
Relocated current production to Nova Scotia	_____
Replaced older assets	_____
Improved the current production processes	_____
No identifiable contribution	_____
Other (please describe) _____	_____
Don't Know/ Not Applicable	

APPENDIX I

RESEARCH AND DEVELOPMENT TAX CREDIT SURVEY INSTRUMENT

Section One

The next few questions request background information about this firm.

1. Does your company have a branch, subsidiary or related company in a location outside Nova Scotia?

   Yes
   No
   Don't Know/ Not Applicable

2. Into which of the following industrial sectors is your firm classified? (Please select no more than three).

   Agriculture, Forestry, and Fishing - Harvesting
   Agriculture, Forestry, and Fishing - Processing
   Mining, Oil, and Gas
   Construction
   Manufacturing
   Information Technology & Communications Services
   Wholesale and Retail Trade
   Financial, Insurance and Real Estate Services
   Other Services
   Other (Specify)
   Don't Know

3. What is the importance of R&D in your company's overall business strategy? Is R&D:

   Of minor importance
   Important
   Very Important
   Don't Know/ Not Applicable

4A. Approximately how many employees did your company employ in Nova Scotia in 1994, 1997 and 1999 (in Full Time Equivalents if possible)? Full Time Equivalent is 2000 hours of work annually (or 50 weeks at 40 hours per week).

	1994	1997	1999
Number of Full Time Equivalents			
Don't Know/ Not Applicable			

4B. Approximately what was the value of your Nova Scotia-based payroll, including benefits, in 1994, 1997 and 1999?

	1994	1997	1999
Value of payroll			
Don't Know/ Not Applicable			

5A. If your R&D activity was measured in dollar terms, what proportions of your Nova Scotia-based R&D activity are conducted in-house and contracted to parties outside the company?

Proportion conducted in-house	
Proportion contracted to outside parties	
Total	100%
Don't Know/ Not Applicable	

5B. If in question # 5A you allocated part of your R&D activity to outside contractors, what is the best estimate of the proportion of that allocation that went to the following:

Commercial supplier	
Non-profit supplier	
Educational institution	
Other (specify type of organization)	
Total	100%
Don't Know/ Not Applicable	

Section Two

The Province of Nova Scotia has had a refundable R&D tax credit since 1994 which is based on the expenditures eligible for the federal Scientific Research and Experimental Development credit. The following questions relate to the 1997 or 1998 tax year expenditures that would be eligible for the Nova Scotia R&D tax credit.

1. What proportion of your eligible R&D activity would fall into Basic Research, Applied Research and Experimental Development? These terms are defined[2] as

- Basic Research is pure research where there is no specific application in mind.
- Applied Research is research where there is a practical application.
- Experimental Development is work performed to overcome technological uncertainty and to make technological improvements in a product or process.

If your total R&D activity in either 1997 or 1998 represents 100%, what proportion of the total

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[2] Survey of Scientific Research and Experimental Development Claimants. Department of Finance. 1996.

fell into each of

Basic Research
Applied Research
Experimental Development
Total 100%
Don't Know/ Not Applicable

2. Based on the same R&D activity considered in the question above, what is the best estimate of the proportions of expenditures that were spent on the following

Licensing of technology
Labor
Consumable materials
Capital equipment
Total 100%
Don't Know/ Not Applicable

3. To the best of your knowledge what proportion of any capital equipment expenditures considered in the previous question would you estimate would relate to machinery and equipment that was manufactured in Nova Scotia, i.e., not just imported through Nova Scotia distributors?

Estimated proportion of equipment expenditures related to
equipment produced in Nova Scotia
Don't Know/ Not Applicable

4. To the best of your knowledge what proportion of any consumables expenditures considered in question # 2 would you estimate would relate to items that were produced in Nova Scotia, i.e., not just imported through Nova Scotia distributors?

Estimated proportion of consumables expenditures related to
Items produced in Nova Scotia
Don't Know/ Not Applicable

5. What proportion of your eligible R&D expenditures was allocated to work on the following sectoral areas:

Information technology or Communications
Biotechnology and Pharmaceuticals
Environmental products and services
Energy
Resource products (other than Energy)
Food science or preparation
Transportation
Construction
Other (specify)

Total	100%
Don't Know	

Section Three

The following questions rank the importance or influence of various factors on your company's overall level of R&D expenditures.

1. Using a scale of 1 to 10, where "1" means "Not at all important" and "10" means "Extremely important" please rank the following influences on the level of your R&D expenditures:

	Not important	Very Important 1 to 10
Cash flow position of the firm		
Maintenance of a ratio of R&D to a budgeted value such as sales		
Creating competitive advantage over competitors		
Government tax support for R&D		
After-tax rate of return on R&D investment		
Don't Know/ Not Applicable		

2. Using a scale of 1 to 10, where "1" means "Not at all important" and "10" means "Extremely important" please rank the importance of the following government supports in influencing the level of your R&D expenditures:

	Not important	Very Important 1 to 10
Federal SRED Tax Credit		
Government contracts for R&D services		
Federal accelerated deductibility of R&D Capital pools		
Provincial R&D tax credit		
Don't Know/ Not Applicable		

3. If there had been no Nova Scotia R&D tax credit in 1997 or 1998 would your expenditures in areas other than R&D have been (select one):

Higher
Significantly higher
Lower
Significantly lower
About the same
Don't Know/ Not Applicable

4. If there had been no Nova Scotia R&D tax credit available in 1997 or 1998 would your Nova Scotia-based R&D expenditures have been (select one):

Lower
Postponed
Foregone
Moved outside the province
Stayed the same
Don't Know/ Not Applicable

5. If the Nova Scotia R&D tax credit had not been refundable in 1997 or 1998 would your Nova Scotia-based R&D expenditures have been (select one):

The same
Lower
Postponed
Foregone
Moved outside the province
Don't Know/ Not Applicable

Section Four

The following questions relate your R&D activity to your firms output.

1. In terms of the lesser timeframe of either the life of your firm or the last five years, what contribution has your Nova Scotia-based R&D activity made to the sales from your Nova Scotia location (select one):

Minor contribution
Moderate contribution
Very important contribution
Don't Know/ Not Applicable

2. In terms of the lesser timeframe of either the life of your firm or the last five years, what has been the primary contribution of your Nova Scotia-based R&D activity to your firm (select one):

Improved processes
Improved product features
Developed new products
Adopted or imitated products new to the firm
Increased the technological knowledge within the firm
No identifiable contribution
Other (please describe)
Don't Know/ Not Applicable

APPENDIX J

ISO9600 TAX CREDIT SURVEY INSTRUMENT

Section A - Company Information

The next few questions request background information about your organization.

A1
What is your company's ISO Registration Status?

Currently seeking certification
Certified (Please give year of certification)

A2
Which industry sector is your company mainly involved in?

Manufacturing
Retail
Distributor
Other (please specify)

A3
Is your establishment a branch office?

Yes
No

A4
What is the location of your corporate head-office?

Nova Scotia
Outside Nova Scotia

A5
Please rank in order of importance, the reasons for obtaining ISO certification:

To access new markets
Retention of current markets
To improve productivity
Required by corporate head-office
Nova Scotia ISO9000 Corporate tax credit
Other (please specify)

Section B - Impact of ISO certification

The following questions attempt to determine the impact of ISO9000 certification on your organization.

B1
Has your company experienced an increase or decrease in the following financial measures as a result of ISO certification?

(1 -large increase, 2 -moderate increase, 3 -no change, 4 -moderate decrease, 5 -large decrease)

Number of Employees	1	2	3	4	5
Sales Revenues	1	2	3	4	5
Profits	1	2	3	4	5
Productivity	1	2	3	4	5

B2
Has your company experienced an increase or decrease in **sales revenue** to the following markets as a result of ISO certification?

(1 -large increase, 2 -moderate increase, 3 -no change, 4 -moderate decrease, 5 -large decrease)

Nova Scotia	1	2	3	4	5
Other Canada	1	2	3	4	5
Foreign Countries	1	2	3	4	5

B3
Has the ISO 9000 certification enabled your company to win contracts or business that otherwise would not have been possible?

Yes
No

B4
Do you believe the benefits of ISO9000 certification to your organization have justified the costs of becoming certified?

Yes
No

Section C - ISO9000 Tax Credit

The following questions attempt to determine the impact of the Provincial ISO9000 Tax Credit on your organization.

The Nova Scotia Government offers a 25% corporate tax credit on eligible ISO 9000 related expenditures.

C1
Has your organization accessed this credit?

Yes (go to question C3)
No

C2
If you answered 'No' to question C1, please indicate why your organization did not access the credit. (Check all that apply)

Did not have Nova Scotia tax payable.
Costs were incurred prior to 1995.
Was not aware of tax credit.
Application process was too complicated.
Organization did not qualify.
Other

C3
Please indicate the importance of the Nova Scotia Tax credit in obtaining certification:

Very Important
Somewhat Important
Not a consideration

C4
If your organization sought professional consulting assistance in obtaining certification, what impact did the tax credit have on this decision.

Very Important
Somewhat Important
Not a consideration
Did not use a professional consultant

C5
Did the tax credit lead to a more effective implementation of ISO certification?
Yes
No

General Comments

Please provide us with your comments on the ISO9000 Tax Credit. You may also register your comments at the Nova Scotia Department of Finance Tax Review web site:
www.gov.ns.ca/finance/fedprov/credit/index.htm

Thank-you for your participation!